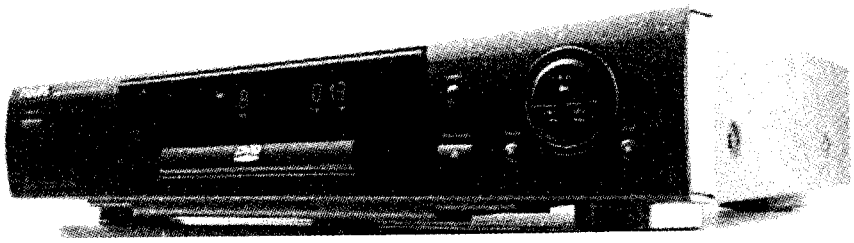
DVD-Video Player

DVD 711/751
DVD 711/001
DVD 751/001

Service
Service
Service



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Service Manual

CLASS 1
LASER PRODUCT

DVD VIDEO

COMPACT disc DIGITAL VIDEO

COMPACT disc DIGITAL AUDIO

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PHILIPS

PHILIPS

1. Technical specifications

Specifications DVD711/001

PLAYBACK SYSTEM

DVD-Video
Video CD
CD (CD-R and CD-RW)

OPTICAL READOUT SYSTEM

Lasertype	Semiconductor AlGaAs
Numerical Aperture	0.60 (DVD)
	0.45 (VCD/CD)
Wavelength	650 nm (DVD)
	780 nm (VCD/CD)

DVD DISC FORMAT

Medium	Optical Disc	
Diameter	12cm (8cm)	
Playing time	One layer	2.15 h*
(12cm)	Dual layer	4 h*
	Two side	4.30 h*
	Single layer	
	Two side	8 h*
	Dual layer	

TV STANDARD	EUROPE	USA
	(PAL/50Hz)	(NTSC/60Hz)
Number of lines	625	525
Playback	Multistandard	(PAL/NTSC)

VIDEO FORMAT

DA Converter	10 bits
Signal handling	Components
Digital Compression	MPEG2 for DVD, MPEG1 for VCD

DVD

Horiz. Resolution	720 pixels**	720 pixels**
Vertical Resolution	576 lines	480 lines

VCD

Horiz. Resolution	352 pixels	352 pixels
Vertical Resolution	288 lines	240 lines

VIDEO PERFORMANCE

Video output	1 Vpp into 75 ohm
S-Video output	Y: 1 Vpp into 75 ohm
	C: 0.3 Vpp into 75 ohm
RGB output	1 Vpp into 75 ohm
Black Level Shift	On/Off
Video Shift	Left/Right

AUDIO FORMAT

Digital	MPEG	Compressed Digital
	DTS/AC-3	
	PCM	16, 20, 24 bits
		fs, 44.1, 48, 96 kHz

Analog Sound Stereo
Dolby Pro Logic downmix from AC-3 multi-channel sound
3D Sound for virtual 5.1 channel sound on 2 speakers

AUDIO PERFORMANCE

DA Converter	24 bits	
DVD	fs 96 kHz	4 Hz - 44 kHz
	fs 48 kHz	4 Hz - 22 kHz
Video CD	fs 48 kHz	4 Hz - 22 kHz
CD	fs 44.1 kHz	4 Hz - 20 kHz
Signal-Noise (1kHz)		103 dB
Dynamic Range (1kHz)		98 dB
Crosstalk (1kHz)		115 dB
Distortion and Noise (1kHz)		95 dB

CONNECTIONS

SCART	Euroconnector 2x
S-Video Output	Mini DIN, 4 pins
Video Output	Cinch (yellow)
Audio L+R output	Cinch (white/red)
Digital Output	1 coaxial, 1 optical
	IEC958 for CDDA / LPCM
	IEC1937 for MPEG1/2 ,AC-3 and DTS

CABINET

Dimensions(w x h x d)	435 x 92 x 320 mm
Weight	Approx. 4 Kg

PACKAGE CONTENTS

DVD-Video Player
Remote Control & Batteries
AC Power cable
User Manual
SCART cable (Euroconnector)
Audio/Video cable

GENERAL FUNCTIONALITY

Stop / Play / Pause
Fast Forward / Backward
Time search
Step Forward / Backward
Slow
Title / Chapter / Track Select
Skip Next / Skip Previous
Repeat (Chapter / Title / All) or (Track / All)
A-B Repeat
Shuffle
Enhanced ease of use graphical interface
Perfect Still with digital multi-tap filter
Zoom (x1.33, x2, x4) with picture enhancement
3D Sound
Virtual jog shuttle
Audio and video bit rate indicator *(only available in certain countries)*

DVD FUNCTIONALITY

Multi-angle Selection
Audio Selection (1 out of max. 8 languages)
Subtitles Selection (1 out of max. 32 languages)
Aspect Ratio conversion (16:9, 4:3 Letterbox, 4:3 Pan Scan)
Parental Control and Disk Lock
Disc Menu support (Title Menu and Root Menu)
Resume (5 discs) after stop / standby
Screen Saver (Dim 75% after 15 min.)
Programming Titles/chapters with Favorite Selection

VIDEO CD FUNCTIONALITY

Playback Control for VCD 2.0 discs
Parental Control and Disc lock
Resume (5 discs) after stop / standby
Screen Saver (Dim 75% after 15 min.)
Programming Tracks with Favorite Selection

AUDIO CD FUNCTIONALITY

Time Display (Total / Track / Remaining Track Time)
Full audio functionality with remote control
Programming with Favorite Track Selection

* *typical playing time for movie with 2 spoken languages and 3 subtitle languages*

** *equivalent to 500 lines on your TV*

Specifications subject to change without prior notice

Specifications DVD751/001

PLAYBACK SYSTEM

DVD-Video
Video CD
CD (CD-R and CD-RW)

OPTICAL READOUT SYSTEM

Lasertype	Semiconductor AlGaAs
Numerical Aperture	0.60 (DVD) 0.45 (VCD/CD)
Wavelength	650 nm (DVD) 780 nm (VCD/CD)

DVD DISC FORMAT

Medium	Optical Disc	
Diameter	12cm (8cm)	
Playing time (12cm)	One layer	2.15 h*
	Dual layer	4 h*
	Two side Single layer	4.30 h*
	Two side Dual layer	8 h*

TV STANDARD

	EUROPE	USA
	(PAL/50Hz)	(NTSC/60Hz)
Number of lines	625	525
Playback	Multistandard	(PAL/NTSC)

VIDEO FORMAT

DA Converter	10 bits
Signal handling	Components
Digital Compression	MPEG2 for DVD, MPEG1 for VCD

DVD

Horiz. Resolution	720 pixels**	720 pixels**
Vertical Resolution	576 lines	480 lines

VCD

Horiz. Resolution	352 pixels	352 pixels
Vertical Resolution	288 lines	240 lines

VIDEO PERFORMANCE

Video output	1 Vpp into 75 ohm
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Signal-Noise (1kHz)		103 dB
Dynamic Range (1kHz)		98 dB
Crosstalk (1kHz)		115 dB
Distortion and Noise (1kHz)		95 dB
Headphone	30mW at 32 Ohm load, headphone imp. 8-2k Ohm	

CONNECTIONS

SCART	2 Euroconnector
S-Video Output	Mini DIN, 4 pins
Video Output	Cinch (yellow)
Audio L+R output	Cinch (white/red)
Digital Output	1 coaxial, 1 optical IEC958 for CDDA / LPCM IEC1937 for MPEG1, MPEG2 and AC-3 DTS
Headphone	6.3 mm Jack
Cinemalink	on SCART

CABINET

Dimensions (w x h x d)	435 x 92 x 320mm
Weight	Approx. 4 Kg

PACKAGE CONTENTS

DVD-Video Player
Remote Control & Batteries
AC Power cord
Instruction for Use
Audio cable
Video cable
SCART cable

GENERAL FUNCTIONALITY

Stop / Play / Pause
Fast Forward / Backward
Time search
Step Forward / Backward
Slow
Title / Chapter / Track Select
Skip Next / Skip Previous
Repeat (Chapter / Title / All) or (Track / All)
A-B Repeat
Shuffle
Scan
Enhanced ease of use graphical interface
Perfect Still with digital multi-tap filter
Zoom (xl.33, x2. x4) with picture enhancement
Personal Color settings (Smart Picture)
Cinemalink interconnection for plug&play
3D Sound
Virtual Jog Shuttle
Audio and video bit rate indicator
Beeper

DVD FUNCTIONALITY

Multi-angle Selection
Audio Selection (1 out of max. 8 languages)
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VIDEO CD FUNCTIONALITY

Playback Control for VCD 2.0 discs
Disc Lock
Resume (5 discs) after stop / standby
Screen Saver (Dim 75% after 15 min.)
Programming Tracks with Favorite Selection

AUDIO CD FUNCTIONALITY

Time Display (Total / Track / Remaining Track Time)
Full audio functionality with remote control
Programming with Favorite Track Selection

* typical playing time for movie with 2 spoken languages and 3 subtitle languages.
** equivalent to 500 lines on your TV

Specifications subject to change without prior notice

2. Warnings and Laser safety instructions

(GB) **WARNING**

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

ESD

(NL) **WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) **ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise a leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller a ce que les composants ainsi que les outils que l'on utilise soient également a ce potentiel.

(D) **WARNUNG**

Alle IC und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern.
Sorgen sie dafür, das Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(I) **AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevita potrebbe essere fortemente ridatta in caso di non osservazione della piu grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt terug gebracht en dat onderdelen, identiek aan de gespecifieerde worden toegepast.

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten.
Der Originalzustand des Gerats darf nicht verandert werden.
Fur Reparaturen sind Original-Ersatzteile zu verwenden.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago idetici a quelli specificati.

(F)

Les normes de sécurité exigent que l'appareil soit remis a l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

SHOCK, FIRE HAZARD SERVICE TEST:

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom,
Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer.
Ref.UL Standard NO.1492.

NOTE ON SAFETY:

Symbol ⚠ : Fire or electrical shock hazard. Only original parts should be used to replace any part with symbol ⚠
Any other component substitution(other than original type), may increase risk or fire or electrical shock hazard.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agrées, seuls habilités à réparer votre appareil en panne."

LASER SAFETY

This unit employs a laser. Only a qualified service person should remove the cover or attempt to service this device, due to possible eye injury.

LASER DEVICE UNIT

Type:	SemiconductorlaserGaAlAs
Wave length:	650 nm (DVD) 780 nm (VCD/CD)
Output Power:	7 mW (DVD) 10 mW (VCD/CD)
Beam divergence:	60 degree

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURE OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

AVOID DIRECT EXPOSURE TO BEAM

WARNING

The use of optical instruments with this product will increase eye hazard.
Repair handling should take place as much as possible with a disc loaded inside the player

WARNING LOCATION: INSIDE ON LASER COVERSHIELD

CAUTION VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARNING SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN
VARO! AVATT AESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASER SÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN
VORSICHT SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETSEN
DANGER VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID DIRECT EXPOSURE TO BEAM
ATTENTION RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU

Warning for powersupply on position 1005

The primary side of the powersupply including the heatsink carries live mains voltage when the player is connected to the mains even when the player is swiched off !
This primary area is not shielded so it is possible to touch copper tracks and/or components when servicing the player. Service personnel have to take precautions to prevent touching this area or components in this area .
The primary side of the powersupply has been indicated with a lightning stroke and a stripe-marked printed on the printed wiring board

Note:
The screws on the basic Engine (position 218 in on the exploded viewdrawing) may never be touched removed or re-adjusted.
Handle the Basic engine with care when the unit has to be exchanged!
The mechanism of the basic engine is very sensative for droping or shocks

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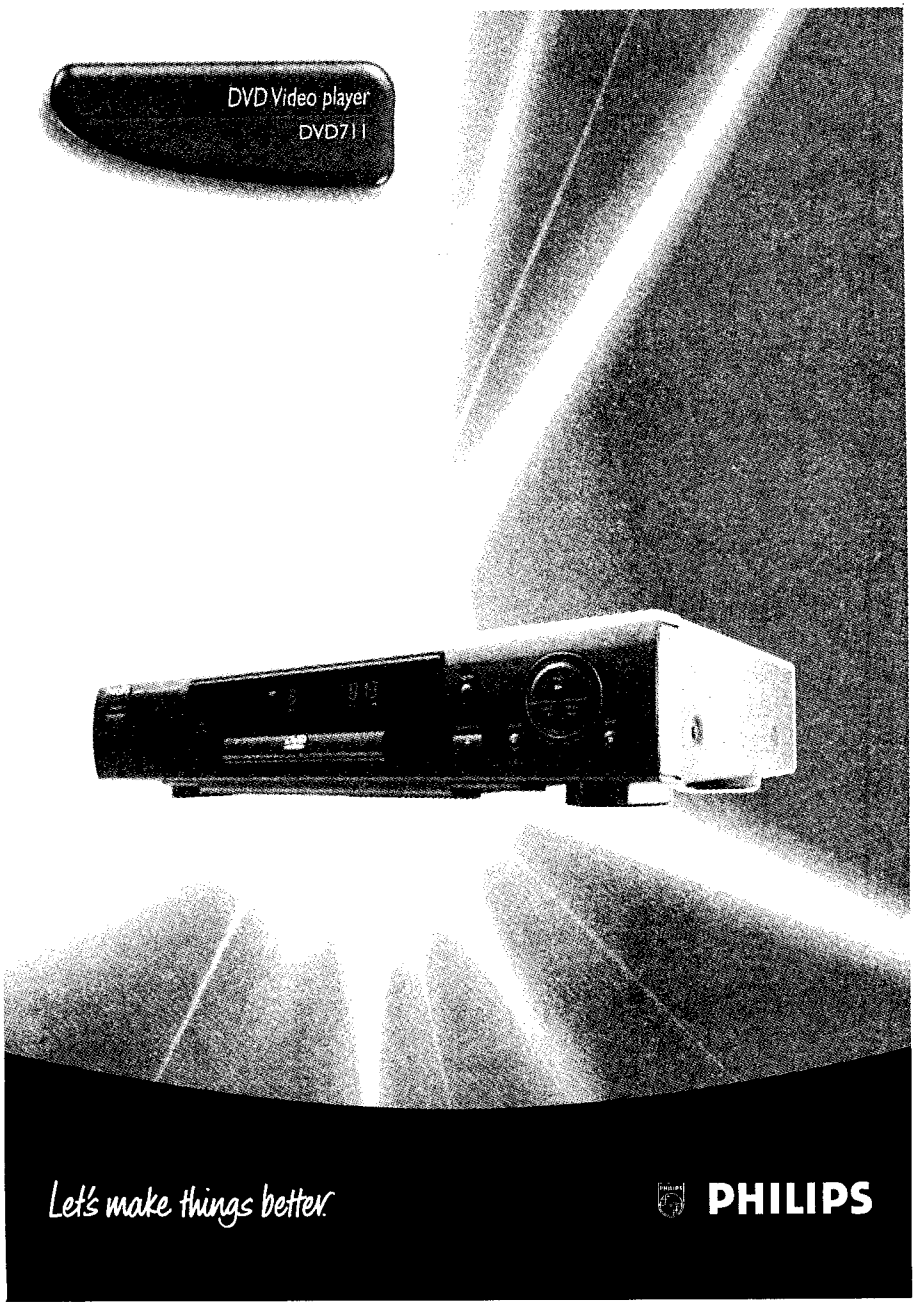

3. Directions for use

Important Note

DK

Advarsel:

Laserrudstråling ved åbning når sikkerhesafbrydere er ude af funktion. Undgå u tsættelse for stråling.

Bemærk:

Netafbryderen POWER er sekundært indkoblet og afbryder ikke strømmen fra nette. Den indbyggede netdel er derfor tilsluttet til lysnettet så længe netstikket sidder i stikkontakten.

N

Observer:

Nettbryteren POWER er sekundert innkoplet. Den innebygdenetdelen er derfor ikke frakoplet nettet så lenge apparatet er tilsluttet nettkontakten.

S

Klass 1 laserapparat

Varning!

Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kann användaren utsättas för laserstrålning, som översjruder gränsen för läserklass 1.

Observera!

Strömbrytaren POWER är sekundärt kopplad och inte bryter strömmen fråån nätet Den inbyggda nätdelen är därför ansluten till elnätet så länge stickproppen sitter i v ägguttaget.

SF

Luokan 1 laserlaite + Klass 1 laserapparat

Varoitus!

Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle lasersäteilille.

Huom.

Toiminnanvalitsin POWER on kytketty toisiopuolelle, eikä se kytke laitetta irti sähköverkosta. Sisäänrakennettu verkko-osa on kytkettynä sähköverkkoon aina silloin, kun pistoke on pistorasiassa.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories. Confidential Unpliublished Works. © 1992 - 1997 Dolby Laboratories, Inc. All rights reserved.

Important Note for Users in the UK

Mains plug

This apparatus is fitted with an approved 13 Amp plug. To change a fuse in this type of plug proceed as follows:

1 Remove fuse cover and fuse.
2 Fix new fuse which should be a BS1362 5 Amp. A.S.T.A. or BSI approved type.
3 Refit the fuse cover.

If the fitted plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place.
If the mains plug contains a fuse, this should have a value of 5 Amp. If a plug without a fuse is used, the fuse at the distribution board should not be greater than 5 Amp.

Note: The severed plug must be disposed of to avoid a possible shock hazard should it be inserted into a 13 Amp socket elsewhere.

How to connect a plug

The wires in the mains lead are coloured with the following code: blue = neutral (N), brown = live (L).

As these colours may not correspond with the colour markings identifying the terminals in your plug, proceed as follows:

- Connect the blue wire to the terminal marked N or coloured black.
- Connect the brown wire to the terminal marked L or coloured red.
- Do not connect either wire to the earth terminal in the plug, marked E (or e) or coloured green (or green and yellow).

Before replacing the plug cover, make certain that the cord grip is clamped over the sheath of the lead - not simply over the two wires.

Copyright in the U.K.
Recording and playback of material may require consent. See Copyright Act 1956 and The Performer's Protection Acts 1958 to 1972.

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The region code for this set is 2.

Since it is usual for DVD movies to be released at different times in different regions of the world, all players have region codes and discs can have an optional region code. If you load a disc of a different region code to your player, you will see the region code notice on the screen. The disc will not play and should be unloaded.

NOTE:
PICTURES SHOWN MAYBE DIFFERENT BETWEEN COUNTRIES.

NEVER MAKE OR CHANGE CONNECTIONS WITH THE POWER SWITCHED ON.

CAUTION

VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM (WARNING LOCATION: INSIDE ON LASER COVERSHIELD)

TruSurround and the SRS symbol are trademarks of SRS Labs., Inc. TruSurround technology is manufactured under license from SRS Labs., Inc.

TruSurround™ with SRS

General information

Laser safety

This unit employs a laser. Due to possible eye injury, only a qualified service person should remove the cover or attempt to service this device.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

LASER	
Type	Semiconductor laser GaAlAs
Wave lenght	650 nm (DVD) 780 nm (VCD/CD)
Output Power	7 mW (DVD) 10 mW (VCD/CD)
Beam divergence	60 degree

NEVER MAKE OR CHANGE CONNECTIONS WITH THE POWER SWITCHED ON.

CE The DVD-VIDEO player is in conformity with the EMC directive and low-voltage directive.

CAUTION VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARNING SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN
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DANGER VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID DIRECT EXPOSURE TO BEAM
ATTENTION RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU

For Customer Use:

Read carefully the information located at the bottom of your DVD-VIDEO player and enter below the Serial No. Retain this information for future reference.

Model No. DVD-VIDEO
Serial No. _____

CLASS 1 LASER PRODUCT

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Introduction

Entertainment for the new millennium

Video was never like this before! Digital video discs provide perfect digital, studio-quality pictures; three dimensional digital, multi-channel audio; story sequences screened from your choice of camera angle; sound tracks in as many as eight languages; and up to 32 subtitles (if available on disc). Whether you watch DVD-Video on wide-screen or regular TV, you always see it the way it was meant to be.

Digital video

DVD-Video uses state-of-the-art MPEG2 data compression technology to register an entire movie on a single 5-inch disc. DVD's variable bitrate compression, running at up to 9.8 Mbits/second, captures even the most complex pictures in their original quality.
The crystal-clear digital pictures have a horizontal resolution of over 500 lines, with 720 pixels (picture elements) to each line. This resolution is more than double that of VHS, superior to Laser Disc, and entirely comparable with digital masters made in recording studios.
DVD-Video discs conform to either the PAL or NTSC video standard. This player can play both PAL and NTSC discs, presenting them in the best possible way on your multi-standard TV screen.
As the universal video system of the future, DVD-Video offers optimal pictures on any TV screen.

Introduction

Your Philips DVD-Video player will play digital video discs conforming to the universal DVD-Video standard. With it, you will be able to enjoy full-length movies with true cinema picture quality, as well as stereo or multi-channel sound (depending on the disc and your playback setup). The unique features of DVD-Video, such as selection of sound track, subtitle languages and different camera angles (again depending on the disc), are all included. What's more, Philips Child Lock lets you decide which discs your children will be able to see.
In addition to DVD-Video discs, you will be able to play all Video CDs and Audio CDs (including finalized CD Recordable and CD Rewritable).
You will find the On-Screen Display, player display, and remote control make the player easy to use. This manual provides all the information you will need, so read on!

DVD-Video

You will recognize DVD-Video discs by the logo shown on left.
Depending on the material on the disc (a movie, video clips, a drama series, etc.) the disc may have one or more Titles. Each Title may have one or more Chapters. To make playback easy and convenient, your player lets you select Titles and playback Chapters.

Video CD

You will recognize Video CDs by the logo shown at left.
Depending on the material on the disc (a movie, video clips, a drama series, etc.) the disc may have one or more tracks. Tracks may have one or more indexes, as indicated on the disc case. To make playback easy and convenient, your player lets you select tracks and indexes.

Super VCD

SVCD discs based on the Super VCD IO Standard based on the Standard of the Electronics Industry of the People's Republic of China.

Audio CD

Audio CDs contain music tracks only.
You will recognize Audio CDs by their logo which is shown at left.
You can play them in conventional style through a stereo system, using the keys on the remote control and/or front panel, or via the TV using the On-Screen Display (OSD).

Unpacking

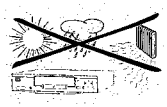
First check and identify the contents of your DVD-Video player package.
You should have the following items.

- DVD-Video player
- Remote Control with batteries
- AC power cord
- Audio/Video cable
- SCART cable
- Instructions for use

If any item is damaged or missing, contact your retailer or Philips.

Keep the packaging materials; you may need them to transport your player in the future.

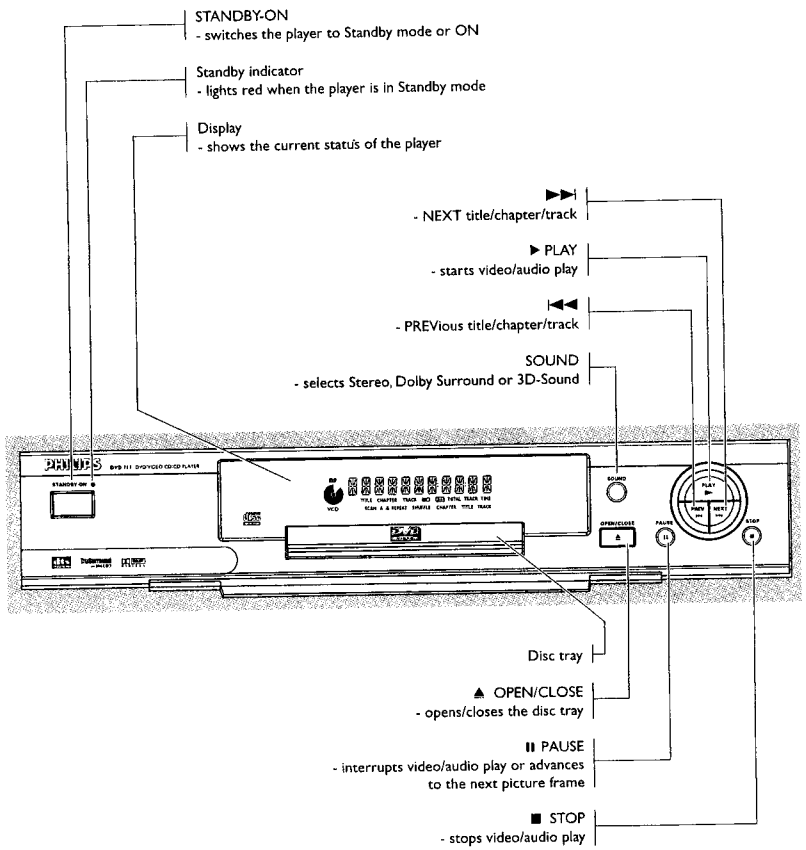
Placement



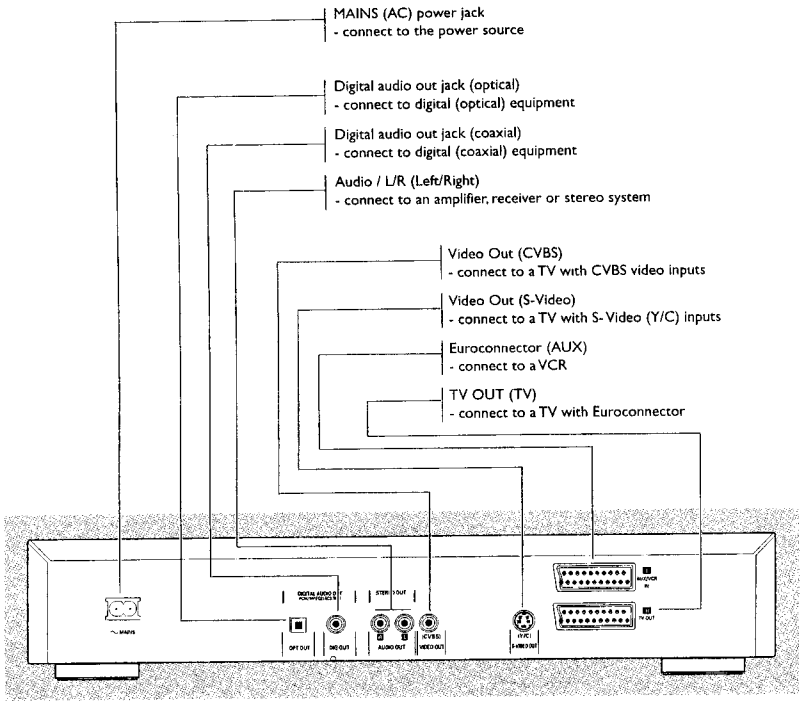
- Place the player on a firm, flat surface.
- Keep the player away from domestic heating equipment and direct sunlight.
- In a cabinet, allow about 2.5 cm (1 inch) of free space all around the player for adequate ventilation.
- If the DVD-Video player cannot read CDs/DVDs correctly, use a commonly available cleaning CD/DVD to clean the lens before taking the DVD-Video player to be repaired. Other cleaning methods may destroy the lens. Always keep the tray closed to avoid dust on the lens.
- The lens may cloud over when the DVD-Video player is suddenly moved from cold to warm surroundings. Playing a CD/DVD is not possible then. Leave the DVD-Video player in a warm environment until the moisture evaporates.

Functional overview

Front panel

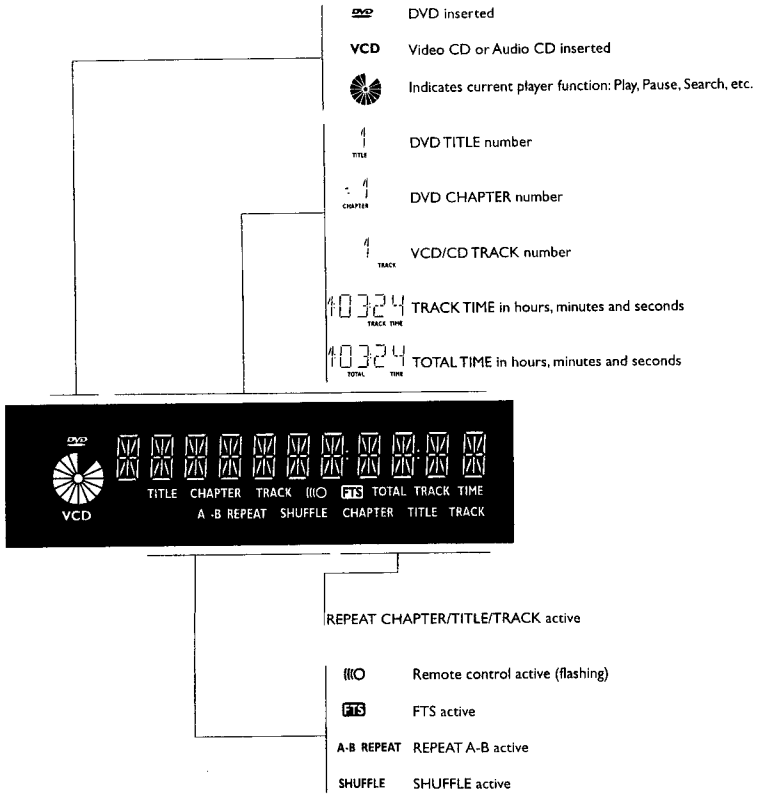


Rear panel

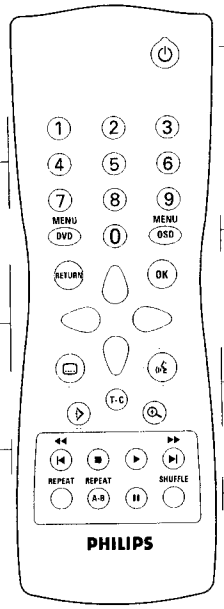

MAINS (AC) power jack
- connect to the power source
Digital audio out jack (optical)
- connect to digital (optical) equipment
Digital audio out jack (coaxial)
- connect to digital (coaxial) equipment
Audio / L/R (Left/Right)
- connect to an amplifier, receiver or stereo system
Video Out (CVBS)
- connect to a TV with CVBS video inputs
Video Out (S-Video)
- connect to a TV with S- Video (Y/C) inputs
Euroconnector (AUX)
- connect to a VCR
TV OUT (TV)
- connect to a TV with Euroconnector

Caution: Do not touch the inner pins of the jacks on the rear panel connectors. Electrostatic discharge may cause permanent damage to the unit.

Display


DVD inserted
VCD Video CD or Audio CD inserted
Indicates current player function: Play, Pause, Search, etc.
DVD TITLE number
DVD CHAPTER number
VCD/CD TRACK number
TRACK TIME in hours, minutes and seconds
TOTAL TIME in hours, minutes and seconds
TITLE CHAPTER TRACK TOTAL TRACK TIME
A -B REPEAT SHUFFLE CHAPTER TITLE TRACK
REPEAT CHAPTER/TITLE/TRACK active
Remote control active (flashing)
FTS active
A-B REPEAT REPEAT A-B active
SHUFFLE SHUFFLE active

Remote control



0-9 numerical key pad

RETURN
- go back to previous menu

OK
- acknowledge menu selection

◁ ▷ ▽ △
- (left/right/up/down) cursor movement

◀◀ |◀
- search backward* / previous chapter or track

■
- stop

▶
- play

▶▶ ▶|
- search forward* / next chapter or track

STANDBY-ON (ON-OFF)

MENU DVD
- access menu of a DVD

MENU OSD
- access or remove On-screen display
- bit rate indicator* (only available on certain models)

- subtitle language selector

- audio language selector

T
- select title

C
- select chapter

- enlarge video image

- select DVD camera angle

REPEAT
- repeat chapter, track, title, disc

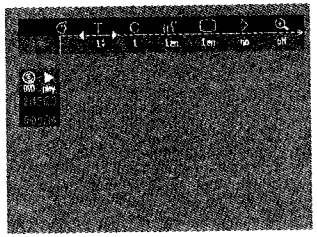
REPEAT A-B
- repeat sequence

SHUFFLE
- playback tracks in random order

II
- pause playback temporarily / frame-by-frame playback

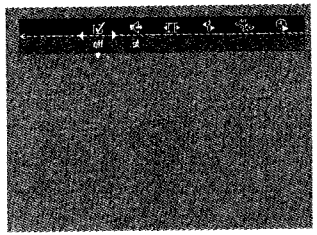
* Press key for about 1 second

On screen display information



Menu bar/Status window

- Personal Preferences
- Title/Track
- Chapter/Index
- Audio language
- Subtitle language
- Angle
- Zoom
- Video Program
- Sound
- Picture by Picture
- Slow motion
- Fast motion
- Time search



Status window icons

The status window displays the current status of the player and appears with the first part of the menu bar. (You must activate this in the Features Menu - see Personal Preferences for details).

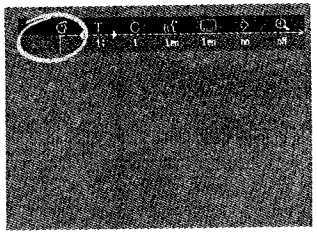
General

Disc type

Tray status

Default screen

The default screen is displayed when the player is in STOP mode.
It may contain a 'Status Window' and a 'Temporary Feedback Field'. This gives information concerning prohibited actions, playback modes, available angles, etc.



Temporary Feedback Field icons

- Repeat All
- Repeat Title
- Repeat Track
- Repeat Chapter
- Shuffle
- Shuffle Repeat
- Repeat A to end
- Repeat A-B
- Angle
- Child Lock On
- Child Safe
- Resume
- Action prohibited

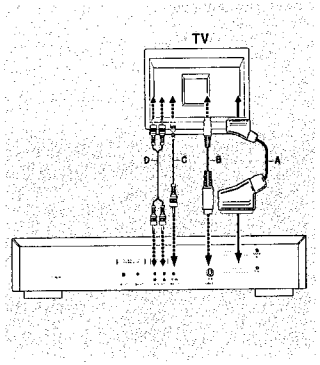
Preparation

General notes

- Depending on your TV and other equipment you wish to connect, there are various ways you could connect the player. Possible connections are shown in the following drawings.
- Please refer to the manuals of your TV, VCR, Stereo System or other devices as necessary to make the best connections.
- Do not connect your DVD-player via your VCR. The video quality could be distorted by the copy protection system.
- For better sound reproduction, connect the player's audio out jacks to the audio in jacks of your amplifier, receiver, stereo or A/V equipment. See 'Connecting to optional equipment'.

Caution: Do not connect the player's audio out jack to the phono in jack of your audio system.

Connecting to a TV



- Connect the Euroconnector to the corresponding connector on the TV using the Euroconnector cable supplied ***(A)***.

If your TV is not equipped with a Euroconnector you can select one of the following alternative connections:

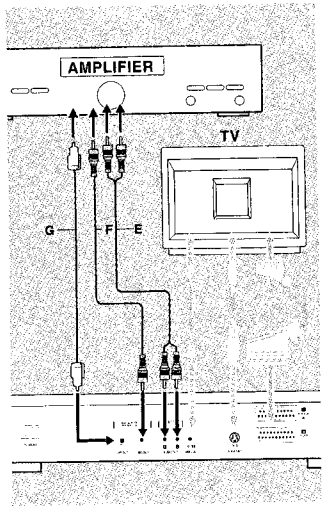
S-Video (Y/C) connection

1 Connect the S-Video jack on the DVD-player to the S-Video in jack on the TV using an optional S-Video cable ***(B)***.
2 Connect the audio Left and Right out jacks to the audio left/right in jacks on the TV ***(D)***.

Video CVBS connection

1 Connect the Video out (CVBS) jack to the video in jack on the TV using the audio/video cable supplied ***(C)***.
2 Connect the audio Left and Right out jacks to the audio left/right in jacks on the TV ***(D)***.

Connecting to optional equipment



Connecting to an amplifier equipped with two channel analog stereo

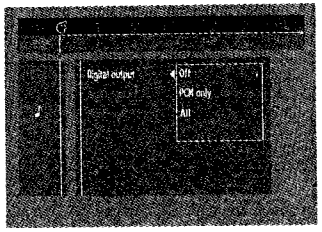
- Connect the audio Left and Right out jacks of the DVD player to the audio left and right in jack on your amplifier, receiver or stereo system, using an audio cable ***(E)***.

Connecting to an amplifier equipped with two channel digital stereo (PCM)

1 Connect the player's digital audio out jack (optical ***G*** or coaxial ***F***) to the corresponding in jack on your amplifier.
Use an optional digital (optical ***G*** or coaxial ***F***) audio cable.
2 You will need to activate the player's digital output (see 'Personal Preferences').

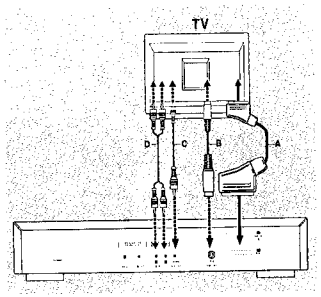
Connecting to an A/V receiver equipped with a multi-channel decoder (Dolby Digital™ (AC-3), MPEG 2 and DTS)

Digital Multi-channel sound
Digital multi-channel connection provides the best sound quality. For this you need a multi-channel A/V receiver that supports one or more of the audio formats supported by your DVD player (MPEG 2, Dolby Digital™ (AC-3), AC3 and DTS). Check the receiver manual and the logos on the front of the receiver.



1 Connect the DVD player's digital audio output (optical ***G*** or coaxial ***F***) to the corresponding input on the receiver using an optional digital (optical ***G*** or coaxial ***F***) audio cable.
2 You will need to activate the player's digital output (see 'Personal Preferences').

Note:
If the audio format of the digital output does not match the capabilities of your receiver, the receiver will produce a strong, distorted sound or no sound at all. The selected audio format of the DVD is displayed in the Status Window when the Menu OSD is activated or Audio button is activated.
Six Channel Digital Surround Sound via digital connection can only be obtained if your receiver is equipped with a Digital Multi-channel decoder.
To see the selected audio format of the current DVD in the Status Window, press the MENU OSD or the Audio Language selector button.

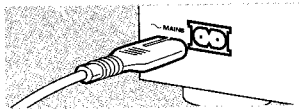


Connecting to an amplifier equipped with Dolby Surround™

Dolby Surround sound
1 Connect the player to the TV, then connect the player's audio Left and Right out jacks to the corresponding in jacks on the Dolby Surround™ Audio/Video receiver, using the audio/video cable supplied (D).

If your amplifier is equipped with a Dolby Digital™ decoder,
- Connect the player as described in 'Connecting to an A/V receiver with multi-channel decoder'.

If your TV is equipped with a Dolby Surround™ decoder,
- Connect the player to the TV as described in 'Connecting to a TV'.

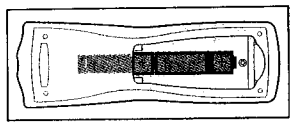


Connecting the power cord

1 Plug the female end of the supplied power cord into the Mains (AC) jack on the rear of the player.
2 Connect the other end of the cord to an AC outlet.

Note: When the player is in the "STANDBY" mode, it is still consuming some power. If you wish to disconnect your player completely from the power, unplug the power cord from the AC outlet.

Caution: Only qualified service personnel should remove the cover or attempt to service this device.



Remote control battery installation

Loading the batteries

1 Open the battery compartment cover.
2 Insert batteries as indicated inside the battery compartment.
3 Close the cover.

Caution: Do not mix old and new batteries. Never mix different types of batteries (standard, alkaline, etc.).

NTSC/PAL Settings

You can switch the NTSC/PAL setting of the DVD player to match the video signal of your TV. This setting only affects the television's on-screen display that shows the stop and setup modes. You may select either NTSC or PAL. To change the DVD player setting to PAL or NTSC, follow the steps below.

1 Unplug the DVD player from the mains.
2 Press and hold ■ and ▶▶| on the front of the DVD player. While holding ■ and ▶▶| plug in the mains.
3 After PAL or NTSC appears on the display panel of the DVD player, release ■ and ▶▶| at the same time. The PAL or NTSC that appears on the display panel indicates the current setting.
4 To change the setting, press ▶▶| within three seconds. The new setting (PAL or NTSC) will appear on the display panel.

General explanation

About this manual

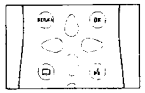
This manual gives the basic instructions for operating this DVD player. Some DVDs require specific operation or allow only limited operation during playback. In these cases, the player may not respond to all operating commands. When this occurs, please refer to the instructions contained with the DVD. When the symbol ✕ appears on the TV screen, the operation is not permitted by the player or the disc.

Remote control operation

- Unless otherwise stated, all operations can be carried out with the remote control. Always point the remote control directly at the player, making sure there are no obstructions in the path of the infrared beam.
  When there are corresponding keys on the front panel of the player, they can also be used.

Menu bar operation

- A number of operations can be carried out via the menu bar on the screen. The menu bar can be accessed by pressing any of the following keys on the remote control: MENU OSD, T-C, Angle, Audio Language, Subtitle Language and Zoom.
- The following functions are available via the menu bar:
  - Personal Preferences
  - Title/Track
  - Chapter/Index
  - Audio language
  - Subtitle language
  - Angle
  - Zoom
  - Video Program
  - Sound
  - Picture by Picture
  - Slow motion
  - Fast motion
  - Time search
- The various items can be selected by pressing the MENU OSD button, then the ▽/△ keys or by pressing relevant keys on the remote control.
- Pressing MENU OSD while the menu bar is displayed will clear the menu bar from the screen.
- When selecting an item in the menu bar, the selected item will be highlighted and the appropriate cursor keys to operate this item will be displayed below the icon.
- < or > indicates that more items are available at the left/right of the menu bar. Press ◁ or ▷ to select these items.



Turning On the power

1 Switch on the TV and select the video input channel for your DVD-Video player.
2 Press ON button.

Initial Setup

General

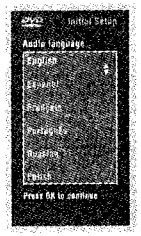
In 'Initial Setup' you may have to set your preferences for some of the player's features. *(not applicable for all menus)*

Operation

After switching on the player for the very first time, the 'Initial Setup Screen' will appear.
The menu for the first item to be set is displayed and the first option is highlighted.

- Use the ▽ △ keys to go through the options in the menu.
  The icon of the selected option will be highlighted.
- Use OK to confirm your selection and to go to the next menu.

Note: Preferences have to be set in the order in which the item menus will appear on the screen.
The 'Initial Setup' screen will only disappear after the settings for the last item have been confirmed.
If any keys other than ▽ △ or OK are pressed ✕, will appear on the screen.
If the player is switched off while setting personal preferences, all preferences have to be set again after switching the player on again.



The following items may have to be set in Initial Setup:

Menu language
The On Screen Menus will be displayed in the language you choose.
You can choose from different languages.

Audio language
The sound will be in the language you choose if it is available on the disc in play. If the language you select is not available, speech will revert to the first spoken language on the disc. You can choose from different languages.

Subtitle language
The subtitles will be in the language you choose if it is available on the disc in play. If the language you select is not available, subtitles will revert to the first subtitle language on the disc. You can choose from different languages.

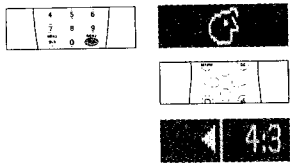
TV Shape
If you have a wide screen (16:9) TV, select 16:9.
If you have a regular (4:3) TV, select 4:3.
If you have a 4:3 TV, you can also select between:
Letterbox for a 'wide-screen' picture with black bars top and bottom, or Pan Scan, for a full-height picture with the sides trimmed. If a disc has Pan Scan, the picture then moves (scans) horizontally to keep the main action on the screen.

Country
Select your country. This also is used as input for the 'Parental Control' feature (see 'Access Control').

Note: All these items may have to be set during 'Initial Setup'. After that, they can always be changed in the Personal Preferences Menu.

Personal Preferences

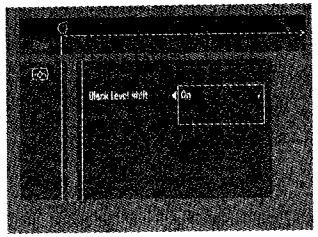
You can set your personal preferences for some of the player features.



General operation:

- Press MENU OSD on the remote control.
- Select in the menu bar.
  ➤ The Personal Preferences menu appears.
- Use the ◁ ▷ ▽ △ keys to toggle through the menus, submenus and submenu options.
  ➤ When a menu item is selected, the cursor keys (on the remote control) to operate the item are displayed next to the item.
- Press **OK** to confirm and return to the main menu.

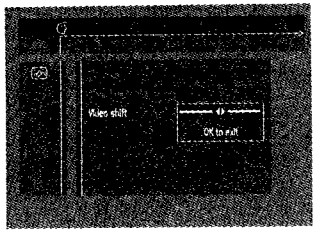
The following items can be adapted:



Picture

-TV Shape
See 'Initial Setup'

- Black level shift (NTSC only)
Select ON for adapting the color dynamics to obtain richer contrasts.



- Video shift
The factory centers the video on your screen. Use this setting to personalize the position of the picture on your TV by scrolling it to the left or right.

Sound
- Digital output
Factory setting: ALL. This means that both coaxial and optical outputs are switched on. If you are not connecting equipment with a digital input, change the setting to OFF.
If your equipment doesn't include a digital multi-channel decoder, set the digital output to PCM (Pulse Code Modulation). Both coaxial and optical outputs are switched on.

- Analog output
Select Stereo, Dolby Surround or 3D sound.

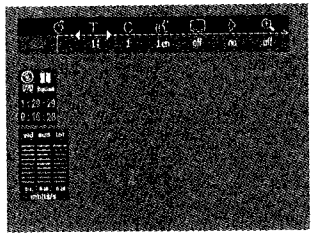
- Night Mode
Optimizes the dynamics of the sound with low volume playback.

- Karaoke vocal
Put this setting to ON only when a multi-channel karaoke DVD is being played. The karaoke channels on the disc will then be mixed to a normal stereo sound.

Language
Select the required Menu, Audio and Subtitle language. See 'Initial Setup'. Audio language and Subtitle language can also be adapted via the Menu bar on the screen.

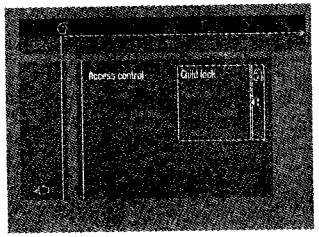
Features
- Access Control
Access Control contains the following features:
Child Lock - When Child Lock is set to ON, a 4-digit code needs to be entered in order to play discs.
Parental control - Allows the conditional presentation of DVDs containing Parental Control information (see 'Access Control').

- Status Window
Displays the current status of the player and is displayed with the menu bar. When disc playback is stopped, it is displayed with the 'Temporary Feedback Field' in the default screen. See 'On-Screen Display information;
Factory setting is ON. Select OFF to suppress display of the Status Window.



- Bit Rate Indicator *(only available for certain countries)*
When activated, the bit rate for video, audio as well as total bit rate is displayed. This is only applicable during playback of DVD & SVCD discs.

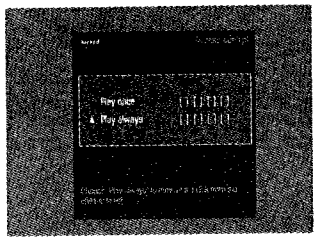
Access control; child lock (DVD and VCD)



Activating/deactivating the child lock

1 When disc playback is stopped, select Access Control in the features menu using the ▽/△ keys.
2 Enter a 4-digit code of your own choice.
3 Enter the code a second time.
4 Move to "Child Lock" using the ▽/△ keys.
5 Move to LOCK/UNLOCK using the ▷ key.
6 Select LOCK using the ▽/△ keys.
7 Press OK or ◁ to confirm, then press ◁ again to exit the menu.
➤ Now unauthorized discs will not be played unless the 4-digit code is entered.
8 Select UNLOCK to deactivate the Child Lock.

Note: Confirmation of the 4-digit code is necessary when:
- The code is entered for the very first time (see above).
- The code is changed (see 'Changing the 4-digit code').
- The code is cancelled (see 'Changing the 4-digit code').



Authorizing discs

- Insert the disc. See 'Loading disc'.
➤ The 'child protect' dialog will appear.

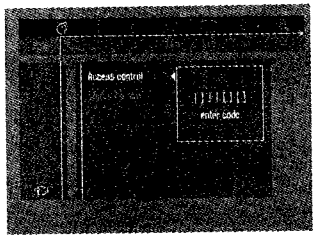
You will be asked to enter your secret code for 'Play Once 'or 'Play Always.' If you select 'Play Once', the disc can be played as long as it is in the player and the player is ON. If you select 'Play Always', the disc will become child safe (authorized) and can always be played, even if the Child Lock is set to ON.

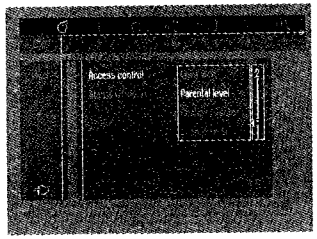
Notes: The player memory maintains a list of 50 authorized ('Child safe') disc titles. A disc will be placed in the list when 'Play Always' is selected in the 'child protect' dialog. Each time a 'child safe' disc is played, it will be placed on top of the list. When the list is full and a new disc is added, the last disc in the list will be removed from the list.
Double sided DVDs may have a different ID for each side. In order to make the disc 'child safe', each side has to be authorized.
Multi-volume VCDs may have a different ID for each volume. In order to make the complete set 'child safe', each volume has to be authorized.

Deauthorizing discs

- Insert the disc. See 'Loading disc'.
➤ Playback starts automatically.
- Press ■ while ☺ is visible.
➤ The ☹ will appear and the disc is now deauthorized.

Access control; Parental control (DVD-Video only)





Movies on DVDs may contain scenes not suitable for children. Therefore, disc may contain 'Parental Control' information which applies to the complete disc or to certain scenes on the disc. These scenes are rated from 1 to 8, and alternative, more suitable scenes are available on the disc. Ratings are country dependent. The 'Parental Control' feature allows you to prevent discs from being played by your children or to have certain discs played with alternative scenes.

Activating/Deactivating Parental Control

1. When disc playback is stopped, select Access Control in the features menu using the ▽/△ keys.
2 Enter your 4-digit code. If necessary, enter the code a second time.
3 Move to Parental Control using the ▽/△ keys.
4 Move to Value Adjustment (1-8) using the ▷ key.
5 Then use the ▽/△ keys or the numerical keys on the remote control to select a rating from 1 to 8 for the disc inserted.

Rating 0 (displayed as '– –'):
Parental Control is not activated. The Disc will be played in full.

Ratings 1 to 8:
The disc contains scenes not suitable for children. If you set a rating for the player, all scenes with the same rating or lower will be played. Higher rated scenes will not be played unless an alternative is available on the disc. The alternative must have the same rating or a lower one. If no suitable alternative is found, play will stop and the 4-digit code has to be entered.
6 Press OK or ◁ to confirm, then press ◁ again to exit the menu.

Country

1 When disc playback is stopped, select **ACCESS CONTROL** in the features menu using the ▽/△ keys.
2 Enter the 4-digit code.
3 Move to **CHANGE COUNTRY** using the ▽ key.
4 Press the ▷ key.
5 Select a country using ▽/△.
6 Press OK or ◁ to confirm, then press ◁ again to exit the menu.

Changing the 4-digit code

1 When disc playback is stopped, select **ACCESS CONTROL** in the features menu using the ▽/△ keys.
2 Enter the old code.
3 Move to **CHANGE CODE** using the ▽ key.
4 Press the ▷ key.
5 Enter the new 4-digit code.
6 Enter the code a second time and reconfirm by pressing OK.
7 Press ◁ to exit the menu.

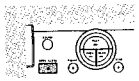
Note: If you forget your 4 digit code, it can be cancelled by pressing ■ four times in the 'Access Control' dialog. You can then enter a new code (twice!) as described above.

Parental Control Disclaimer

This DVD player features the PARENTAL CONTROL system which is intended to activate when playing DVD discs furnished with certain software coding. This is according to technical standards adopted by the set maker and disc content industries.
Please note that the PARENTAL CONTROL system will not operate a DVD disc which is not furnished with the appropriate software coding. Also note that at the time of release of this DVD player, certain aspects of the technical standards had not been settled between set makers and the disc industries.
On this basis Philips cannot guarantee functioning of the PARENTAL CONTROL system and denies any liability associated with unintended watching of disc content.
If in doubt, please make sure the disc plays according to your PARENTAL CONTROL settings before you allow children access.

Operation

Loading discs



1 Press **OPEN/CLOSE** on the front of the player. The disc tray opens.
2 Load your chosen disc in the tray, label side up (also when a double sided DVD is inserted). Make sure it is sitting properly in the correct recess.
3 Gently push the tray, or press **OPEN/CLOSE**, to close the tray.

➤ READ appears in the status window and on the player display, and playback starts automatically.

Note: If 'Child Lock' is set to ON and the disc inserted is not in the 'child safe' list (not authorized), the 4-digit code must be entered and/or the disc must be authorized (see 'Access Control').

Playing a DVD-video disc

Playing a title

➤ After inserting the disc and closing the tray, playback starts automatically and the status window and the player display show the type of disc loaded, as well as information about the disc's contents and playing time.

The disc may invite you to select an item from a menu. If the selections are numbered, press the appropriate numerical key; if not, use the ▽/△, ◁/▷ keys to highlight your selection, then press OK.

➤ The currently playing title and chapter number are displayed in the menu bar and the player display.

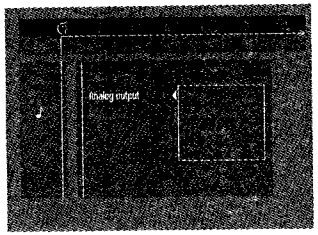
The elapsed playing time is shown in the status window and the player display.

- If required, you can use the **Sound** key to select Stereo, Dolby Surround or 3D-Sound.
  Play may stop at the end of the Title, and the player may return to the DVD menu. To go on to the next title, press ▶.
- To stop play at any other time, press ■.
  ➤ The default screen will appear, giving information about the current status of the player.
- You can resume play from the point at which you stopped play. Press ▶; when you see the Resume icon I▶ on the screen, press ▶ again.
  ➤ The **RESUME** feature applies not only to the disc in the player, but also to the last four discs you have played. Simply reload the disc and press ▶; when you see the Resume icon I▶ on the screen , press ▶ again.

Note: Since it is usual for DVD movies to be released at different times in different regions of the world, all players have region codes. Discs can have an optional region code. If you load a disc of a different region code into your player, you will see the region code notice on the screen. The disc will not play and should be removed from the player.

Playing a Video CD

Playing a disc



- After inserting the disc and closing the tray, playback starts automatically and the status window and the player display show the type of disc loaded, as well as information about the disc's contents and playing time.
- The disc may invite you to select an item from a menu. If the selections are numbered, press the appropriate numerical key.
- The currently playing track number is displayed in the menu bar and the player display. The elapsed playing time is shown in the status window and the player display.

- If required, you can use the **SOUND** key to select Stereo, Dolby Surround or 3D-Sound.
- To stop play at any time, press ■.
  ➤ The default screen will then appear.
- You can resume play from the point at which you stopped play. Press ▶; when you see the Resume icon on the screen I▶, press ▶ again.

The resume feature applies not only to the disc in the player, but also to the last four discs you have played. Simply reload the disc and press ▶; when you see the Resume icon I▶ on the screen, press ▶ again.

General features

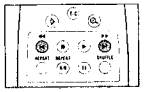
Note: Unless stated otherwise, all operations described are based on remote control operation. A number of operations can also be carried out via the menu bar on the screen (see 'Menu bar operation').

Moving to another title/TRACK

When a disc has more than one title or track (which you can see from both the menu bar and the player display), you can move to another title as follows:

- Press T-C (title/chapter), then press ▶I briefly during play to select the next title/track.
- Press T-C (title/chapter), then press I◀ briefly during play to return to the beginning of the current title/track. Press I◀ **twice** briefly to step back to the previous title/track.

Moving to another chapter/index



When a title on a disc has more than one chapter or a track has more than one index (which you can see from the player display and on the menu bar), you can move to another chapter/index as follows:

- Press ▶I briefly during play to select the next chapter/index.
- Press I◀ briefly during play to return to the beginning of the current chapter/index. Press I◀ **twice** briefly to step back to the previous chapter/index.
- To go directly to any chapter or index, select T-C (title/chapter), then enter the chapter/index number using the numerical keys (0-9).

Note: If the number has more than one digit, press the keys in rapid succession.

Still Picture and Frame-by-frame playback

- Select ◁I▷ (picture by picture) in the menu bar.
- Use the ▽ key to enter the picture by picture menu.
  ➤ The player will now go into PAUSE mode.
- Use the cursor keys ◁ ▷ to select the previous or next picture frame.
- To exit Picture by picture mode, press ▶ or △.

You can also step forward by pressing **II** repeatedly on the remote control.

Search

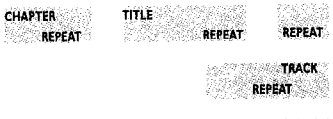
- Select ◁◁ ▷▷ (Fast motion) in the menu bar.
- Use the ▽ keys to enter the Fast Motion menu.
- Use the ◁ ▷ keys to select the required speed: -32, -8 or -4 (backward), or +4, +8, +32 (forward).
- Select 1 to play at normal speed again.
- To exit Fast Motion mode, press ▶ or △.

To search forward or backward through different speeds, you can also hold down ◀◀ or ▶▶.

Repeat

DVD-Video Discs - Repeat chapter/title/disc

- To repeat the currently playing chapter, press **REPEAT**.
  ➤ REPEAT CHAPTER appears on the player display.
- To repeat the title currently playing , press **REPEAT** a second time
  ➤ REPEAT TITLE appears on the display.
- To repeat the entire disc, press **REPEAT** a third time
  ➤ REPEAT appears on the display.
- To exit Repeat mode, press **REPEAT** a fourth time.



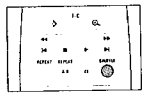
Video CDs - Repeat track/disc

- To repeat the track currently playing , press **REPEAT**.
  ➤ REPEAT TRACK appears on the player display.
- To repeat the entire disc, press **REPEAT** a second time.
  ➤ REPEAT appears on display and screen.
- To exit Repeat mode, press **REPEAT** a third time.

Repeat A-B

To repeat a sequence in a title:

- Press **REPEAT A-B** at your chosen starting point;
  ➤ A- appears briefly on the screen.
- Press **REPEAT A-B** again at your chosen end point;
  ➤ A-B REPEAT appears briefly on the display, and the repeat sequence begins (A-B REPEAT is displayed on the front panel of the player).
- To exit the sequence, press **REPEAT A-B**.



Shuffle

DVD-Video discs

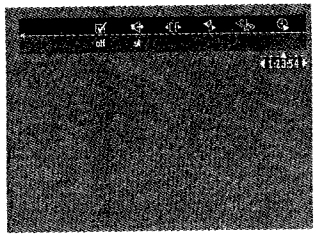
This shuffles the playing order of chapters within a title, if the title has more than one.

- Press **SHUFFLE** during play.
  - ➤ SHUFFLE appears on the screen for about 2 seconds.
- To return to normal play, press **SHUFFLE** again.

Video CDs

This shuffles the playing order of the tracks, if the disc has more than one.

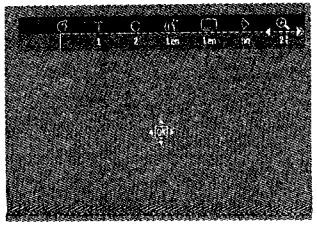
- Press **SHUFFLE** during play.
  - ➤ SHUFFLE appears on the screen for about 2 seconds.
- To return to normal play, press **SHUFFLE** again.



Time search

The Time Search function allows you to start playing at any chosen time on the disc.

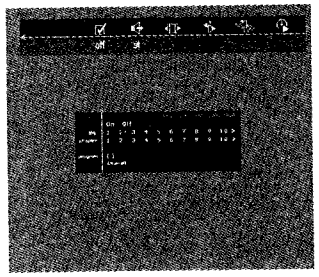
- Select ⏲ (Time Search) in the menu bar.
- Press ▽.
  - ➤ The player will now go into **PAUSE** mode.
  - ➤ A time edit box appears on the screen, showing the elapsed playing time of the current disc.
- Use the digit keys to enter the required start time. Enter hours, minutes and seconds from left to right in the box.
  - ➤ Each time an item has been entered, the next item will be highlighted.
- Press **OK** to confirm the start time.
  - ➤ The time edit box will disappear and play starts from the selected time position on the disc.



Zoom

The Zoom function allows you to enlarge the video image and to pan through the enlarged image.

- Select 🔍 (Zoom) in the menu bar.
- Press ▽/△ to activate the ZOOM function and select the required zoom factor: 1.33 or 2 or 4.
  - ➤ The player will go into Pause mode.
  - ➤ The selected zoom factor appears below the Zoom icon in the menu bar and *'Press OK to pan'* appears below the menu bar.
  - ➤ The picture will change accordingly.
- Press **OK** to confirm the selection.
  - ➤ The panning icons appear on the screen: △ ▽ ◁ ▷ and **OK**.
- Use the △ ▽ ◁ ▷ keys to pan across the screen.
- When **OK** is pressed only the zoomed picture will be shown on the screen.
- If you wish to zoom at any moment, press 🔍 (Zoom) and select the required zoom factor as described above.
- To exit Zoom mode:
  - Press ▶.
    - ➤ Playback will resume.
  - Press **STOP**, **MENU OSD**.



FTS-Video

- The FTS-Video function allows you to store your favorite titles and chapters (DVD) and favorite tracks and indexes (VCD) for a particular disc in the player memory.
- Each FTS program can contain 20 items (titles, chapters).
- Each time an FTS program is played it will be placed on top of the list. When the list is full and a new program is added, the last program in the list will be removed from the list.
- The selections can be called up and played at any time.

Storing a FTS-Video Program

- In STOP mode, select **Video FTS** ☑ in the menu bar.
- Press ▽ to open the menu.
  - ➤ The **Video FTS** menu appears.
- Press ◁ or ▷ or **FTS** to select **ON** or **OFF**.

Storing titles/tracks

- Press ▽ to select **TITLES**.
- Use ◁ or ▷ to select the required title.
- Press **OK** if you wish to store the entire title.
  - ➤ The title number will be added to the list of selections.

Storing chapters/indexes

- Press ▽ on the selected title number.
  - ➤ The title number will be marked and the highlight moves to the first available chapter number for this title.
- Use ◁ or ▷ to select the required chapter number.
- Press **OK** to confirm the selection.
  - ➤ The title/chapter selection will be added to the list of selections.
- Press **MENU OSD** to exit the **Video FTS** ☑ menu.

Erasing a FTS-Video Program

- In STOP mode, select **Video FTS** ☑ in the menu bar.
- Use ▽ to select **PROGRAM**.
- Use ◁ or ▷ to select the required selection number.
- Press **OK** to erase the selection.
- Press **MENU OSD** to exit.

If you wish to erase all selections:

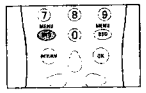
- In STOP mode, select **Video FTS** ☑ in the menu bar.
- Use ▽ to select **CLEAR ALL**.
- Press **OK**.
  - ➤ All selections will now be erased.
- Press **MENU OSD** to exit.

Special DVD features

Checking the contents of DVD-Video discs: Menus

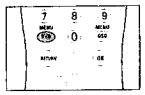
For titles and chapters, selection menus may be included on the disc. The DVD's menu feature allows you to make selections from these menus. Press the appropriate numerical key; or use the ▽, △, ▷, ◁ keys to highlight your selection, then press **OK**.

Title menus



- Press **MENU DVD**.
  ➤ If the current title has a menu, the menu will appear on the screen. If no menu is present in the title, the disc menu will be displayed.
- The menu can list camera angles, spoken language and subtitle options, and chapters for the title.
- To remove the title menu, press **MENU DVD** again.

Disc menu



- Press T-C then press **MENU DVD**.
  ➤ The disc menu is displayed.
- To remove the disc menu, press T-C, then press **MENU DVD**.

Camera Angle

If the disc contains sequences recorded from different camera angles, the angle icon appears, showing the number of available angles and the angle being shown currently. You can then change the camera angle if you wish.

- Use the ▽/△ keys to select the required angle in the angle icon.
  ➤ After a small delay, play changes to the selected angle. The angle icon remains displayed until multiple angles are no longer available.

Changing the audio language

- Select (Audio) in the menu bar.
- Press or ▽/△ repeatedly to see the different languages.

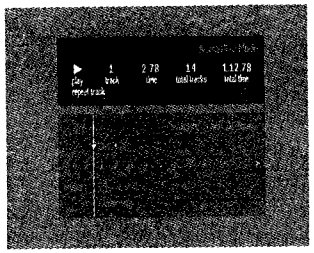
Subtitles

- Select (Subtitle) in the menu bar.
- Press or ▽/△ repeatedly to see the different subtitles.

Special VCD-Features

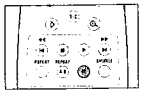
Playback Control (PBC)

- Load a Video CD with PBC and press ▶.
- Go through the menu with the keys indicated on the TV screen until your chosen passage starts to play. If a PBC menu consists of a list of titles, you can select a title directly.
- Enter your choice with the numerical keys (0-9).
- Press **RETURN** to go back to the previous menu.
- You may also set the PBC OFF under Personal Preferences menu.



Playing an audio CD

- After loading the disc, playback starts automatically.
- If the TV is on, the Audio CD screen appears.
- The number of tracks and the total playing time will be shown on the screen.
- During play, the current track number and its elapsed playing time will be shown on the screen and on the player display.
- Playback will stop at the end of the disc.
- To stop play at any other time, press ■.

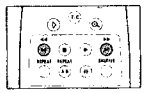


Pause

- Press **II** during play.
- To return to play, press ▶.

Search

- To search forward or backward through the disc at four times normal speed, hold down ◀◀ or ▶▶ for about one second during play.
  ➤ Search begins, and sound is partially muted.
- To step up to eight times the normal speed, press ◀◀ or ▶▶ again.
  ➤ Search goes to eight times the speed, and the sound is muted.
- To return to four times the normal speed, press ◀◀ or ▶▶ again.
- If the TV is on, search speed and direction are indicated on the screen each time ◀◀ or ▶▶ is pressed.
- To end the search, press ▶ to resume playback or ■ to stop.

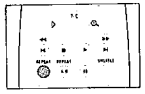


Moving to another track

- Press ▶| briefly during play to go to the next track.
- Press |◀ briefly during play to return to the beginning of the current track. Press |◀ **twice** briefly to step back to the previous track.
- To go directly to any track, enter the track number using the numerical keys **(0-9)**.

Shuffle

- Press **SHUFFLE** during play.
  ➤ The order of the tracks is changed.
- To return to normal play, press **SHUFFLE** again.



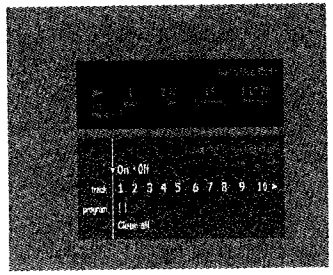
Repeat track/disc

- To repeat the track currently playing , press **REPEAT**.
  ➤ **REPEAT TRACK** appears on the display.
- To repeat the entire disc, press **REPEAT** a second time.
  ➤ **REPEAT** appears on the display.
- To exit Repeat mode, press **REPEAT** a third time.

Repeat A-B

To repeat a sequence:

- Press **REPEAT A-B** at your chosen starting point;
  ➤ **A-** appears on the player display.
- Press **REPEAT A-B** again at your chosen end point;
  ➤ **A-B** appears on the display, and the sequence begins to play repeatedly.
- To exit the sequence, press **REPEAT A-B** again.



FTS Program

- FTS Program allows you to store your favorite tracks for a particular disc in the player memory.
- Each FTS Program can contain 20 tracks.

Storing an FTS Program

1 Load a disc and stop playback.
2 Use ▽ to go to the list of available tracks.
3 . Use ◁ or ▷ to select tracks from the list.
To go directly to any track, enter the track number using the numerical keys **(0-9)**.
4 Store each track by pressing **OK**.
➤ The track numbers will be added to the list of selected tracks.
➤ The number of tracks and the playing time of the program will be shown on the screen and the player display.

When your FTS Program is complete, press ▶ to start play, or △ to go back to Stop mode. In either case, the FTS Program will be automatically memorized.

Switching FTS ON/OFF
1 Use △/▽ to move to the top.
2 Use ◁ or ▷ to select either ON or OFF.

Erasing a track from an FTS Program
1 Use ▽ to go to the list of selected tracks.
2 Use ◁ or ▷ to select the track number you wish to erase.
3 Press **OK**.
➤ The track number will be erased from the list of selected tracks.

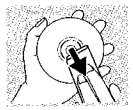
Erasing the complete program
- Use ▽ to select Clear All, then press **OK**.
  ➤ The complete FTS Program for the disc will be erased.

Before requesting service

If it appears that the DVD-Video player is faulty, first consult this checklist. It may be that something has been overlooked. Under no circumstances attempt to repair the system yourself; this will invalidate the warranty.

Look for the specific symptom(s). Then perform only the actions listed to remedy the specific symptom(s).

Symptom	Remedy
No power	Make sure the AC cord is properly connected. Check if there is power at the AC outlet by plugging in another appliance.
No picture	Check if the TV is switched on. Check the video connection.
Distorted picture	Check the disc for fingerprints and clean with a soft cloth, wiping from center to edge. Sometimes a small amount of picture distortion may appear .This is not a malfunction.
Completely distorted picture or no color with player menu.	If the picture is distorted completely or if the picture rolls vertically, make sure the NTSC/PAL setting at the DVD player matches the video signal of your television. If your TV video signal is NTSC, select the NTSC setting at the DVD player. If your video signal is PAL, select the PAL setting - see **NTSC/PAL SETTINGS**.
Distorted or Black/White picture with DVD or Video CD.	The disc format does not match your TV's video signal (PAL/NTSC).
No sound	Check audio connections. If you are using a HiFi amplifier, try another sound source.
Distorted sound from HiFI amplifier.	Check to make sure that no audio connections are made to the amplifier phono input.
No audio at digital output.	Check the digital connections. Check the settings menu to make sure the digital output is set to ALL or PCM. Check if the audio format of the selected audio language matches your receiver capabilities.
Disc can't be played.	Ensure the disc label is facing up. Clean the disc. Check if the disc is defective by trying another disc. Check to see if the disc is defective, badly scratched or warped (not flat)
No return to start-up screen when disc is removed.	Reset by switching the player off, then on again. Check to see if the program requires another disc to be loaded.
The player does not respond to the remote control.	Aim the remote control directly at the sensor on the front of the player. Remove any obstacles between the player and the remote control. Inspect or replace the batteries in the remote control.
Buttons do not work.	In order to completely reset the player, unplug the AC cord from the AC outlet for a few seconds.
Player does not respond to all operating commands during playback.	Operations are not permitted by the disc. Refer to the instructions of the disc.
DVD-Video player cannot read CDs/DVDs correctly.	Use a commonly available cleaning CD/DVD to clean the lens before taking the DVD-Video player to be repaired.

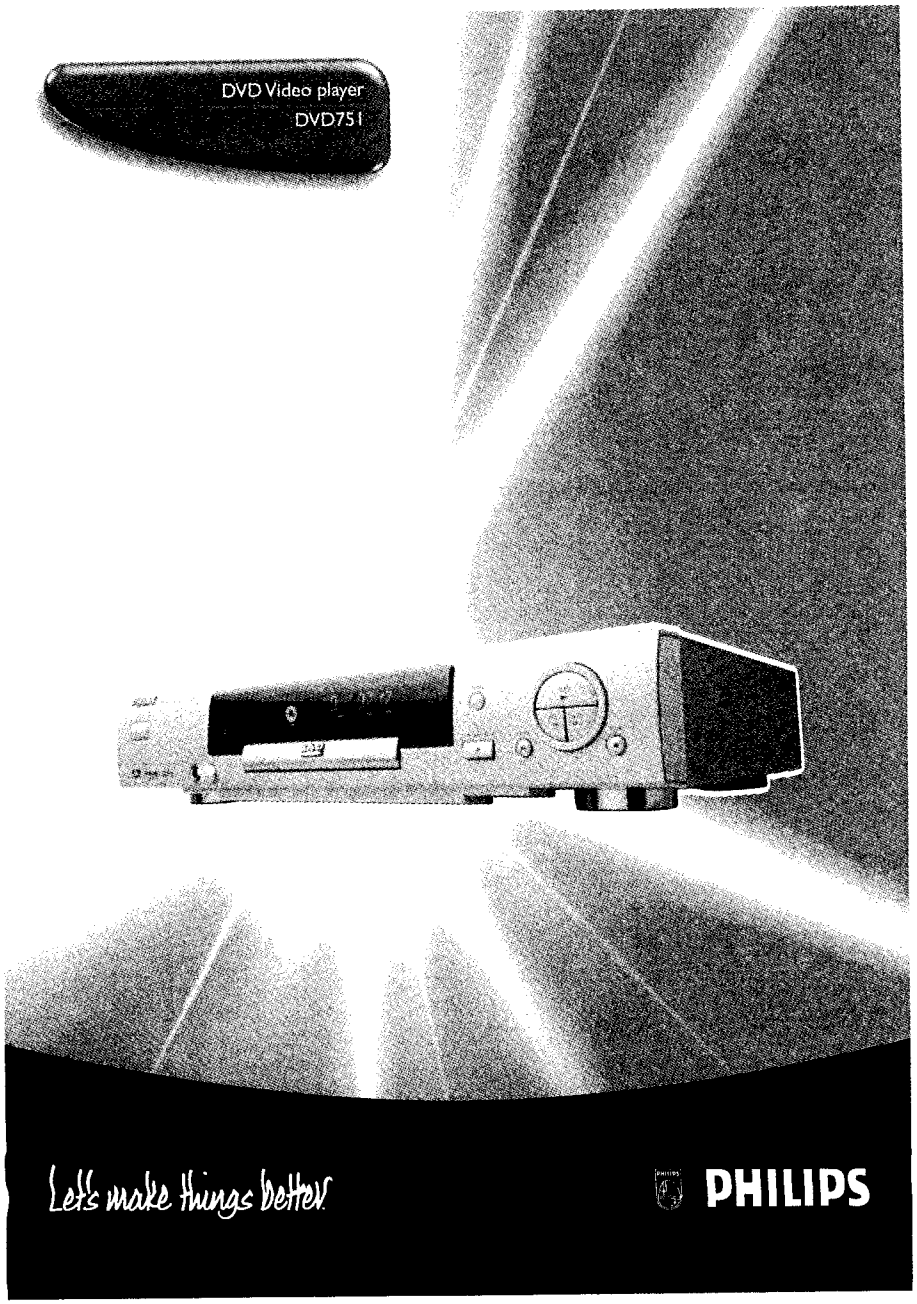


Cleaning discs

Some problems occur because the disc inside the player is dirty. To avoid these problems clean your discs regularly, in the following way:

- When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the center out.

Caution: Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for analog discs.



Important Note

DK

Advarsel:

Laserrudstråling ved åbning når sikkerhesafbrydere er ude af funktion. Undgå u tsættelse for stråling.

Bemærk:

Netafbryderen POWER er sekundært indkoblet og afbryder ikke strømmen fra nette. Den indbyggede netdel er derfor tilsluttet til lysnettet så længe netstikket sidder i stikkontakten.

N

Observer:

Nettbryteren POWER er sekundert innkoplet. Den innebygdenetdelen er derfor ikke frakoplet nettet så lenge apparatet er tilsluttet nettkontakten.

S

Klass 1 laserapparat

Varning!

Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kann användaren utsättas för laserstrålning, som översjruder gränsen för läserklass 1.

Observera!

Strömbrytaren POWER är sekundärt kopplad och inte bryter strömmen fråan nätet Den inbyggda nätdelen är därför ansluten till elnätet så länge stickproppen sitter i v ägguttaget.

SF

Luokan 1 laserlaite + Klass 1 laserapparat

Varoitus!

Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle lasersäteilille.

Huom.

Toiminnanvalitsin POWER on kytketty toisiopuolelle, eikä se kytke laitetta irti sähköverkosta. Sisäänrakennettu verkko-osa on kytkettynä sähköverkkoon aina silloin, kun pistoke on pistorasiassa.

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Important Note for Users in the UK

Mains plug

This apparatus is fitted with an approved 13 Amp plug. To change a fuse in this type of plug proceed as follows:

1 Remove fuse cover and fuse.
2 Fix new fuse which should be a BS1362 5 Amp. A.S.T.A. or BSI approved type.
3 Refit the fuse cover.

If the fitted plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place.
If the mains plug contains a fuse, this should have a value of 5 Amp. If a plug without a fuse is used, the fuse at the distribution board should not be greater than 5 Amp.

Note: The severed plug must be disposed of to avoid a possible shock hazard should it be inserted into a 13 Amp socket elsewhere.

How to connect a plug

The wires in the mains lead are coloured with the following code: blue = neutral (N), brown = live (L).

As these colours may not correspond with the colour markings identifying the terminals in your plug, proceed as follows:

- Connect the blue wire to the terminal marked N or coloured black.
- Connect the brown wire to the terminal marked L or coloured red.
- Do not connect either wire to the earth terminal in the plug, marked E (or e) or coloured green (or green and yellow).

Before replacing the plug cover, make certain that the cord grip is clamped over the sheath of the lead - not simply over the two wires.

Copyright in the U.K.
Recording and playback of material may require consent. See Copyright Act 1956 and The Performer's Protection Acts 1958 to 1972.

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The region code for this set is 2.

Since it is usual for DVD movies to be released at different times in different regions of the world, all players have region codes and discs can have an optional region code. If you load a disc of a different region code to your player, you will see the region code notice on the screen. The disc will not play, and should be unloaded.

NOTE:
PICTURES SHOWN MAYBE DIFFERENT BETWEEN COUNTRIES.

NEVER MAKE OR CHANGE CONNECTIONS WITH THE POWER SWITCHED ON.

CAUTION

VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM (WARNING LOCATION: INSIDE ON LASER COVERSHIELD)

TruSurround and the SRS symbol are trademarks of SRS Labs., Inc. TruSurround technology is manufactured under license from SRS Labs., Inc.

TruSurround™ with SRS

General information

Laser safety

This unit employs a laser. Due to possible eye injury, only a qualified service person should remove the cover or attempt to service this device.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

LASER	
Type	Semiconductor laser GaAlAs
Wave lenght	650 nm (DVD) 780 nm (VCD/CD)
Output Power	7 mW (DVD) 10 mW (VCD/CD)
Beam divergence	60 degree

NEVER MAKE OR CHANGE CONNECTIONS WITH THE POWER SWITCHED ON.

CE The DVD-VIDEO player is in conformity with the EMC directive and low-voltage directive.

CAUTION VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARNING SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN
VARO! AVATTAESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LASER SÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN
VORSICHT SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETSEN
DANGER VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID DIRECT EXPOSURE TO BEAM
ATTENTION RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU

For Customer Use:

Read carefully the information located at the bottom of your DVD-VIDEO player and enter below the Serial No. Retain this information for future reference.

Model No. DVD-VIDEO
Serial No. _____

CLASS 1 LASER PRODUCT

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Introduction

Entertainment for the new millennium

Video was never like this before! Digital video discs provide perfect digital, studio-quality pictures; three dimensional digital, multi-channel audio; story sequences screened from your choice of camera angle; sound tracks in as many as eight languages; and up to 32 subtitles (if available on disc). Whether you watch DVD-Video on wide-screen or regular TV, you always see it the way it was meant to be.

Digital video

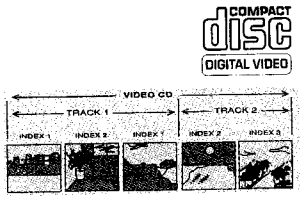
DVD-Video uses state-of-the-art MPEG2 data compression technology to register an entire movie on a single 5-inch disc. DVD's variable bitrate compression, running at up to 9.8 Mbits/second, captures even the most complex pictures in their original quality.
The crystal-clear digital pictures have a horizontal resolution of over 500 lines, with 720 pixels (picture elements) to each line. This resolution is more than double that of VHS, superior to Laser Disc, and entirely comparable with digital masters made in recording studios.
DVD-Video discs conform to either the PAL or NTSC video standard. This player can play both PAL and NTSC discs, presenting them in the best possible way on your multi-standard TV screen.
As the universal video system of the future, DVD-Video offers optimal pictures on any TV screen.

Introduction

Your Philips DVD-Video player will play digital video discs conforming to the universal DVD-Video standard. With it, you will be able to enjoy full-length movies with true cinema picture quality, as well as stereo or multi-channel sound (depending on the disc and your playback setup).
The unique features of DVD-Video, such as selection of sound track, subtitle languages and different camera angles (again depending on the disc), are all included. What's more, Philips Child Lock lets you decide which discs your children will be able to see.
In addition to DVD-Video discs, you will be able to play all Video CDs and Audio CDs (including finalized CD Recordable and CD Rewritable).
You will find the On-Screen Display, player display, and remote control make the player easy to use. This manual provides all the information you will need, so read on!

DVD-Video

You will recognize DVD-Video discs by the logo shown on left.
Depending on the material on the disc (a movie, video clips, a drama series, etc.) the disc may have one or more Titles. Each Title may have one or more Chapters. To make playback easy and convenient, your player lets you select Titles and playback Chapters.



Video CD

You will recognize Video CDs by the logo shown at left.
Depending on the material on the disc (a movie, video clips, a drama series, etc.) the disc may have one or more tracks. Tracks may have one or more indexes, as indicated on the disc case. To make playback easy and convenient, your player lets you select tracks and indexes.

Super VCD

SVCD discs based on the Super VCD IO Standard based on the Stanard of the Electronics Industry of the People's Republic of China.

Audio CD

Audio CDs contain music tracks only.
You will recognize Audio CDs by their logo which is shown at left.
You can play them in conventional style through a stereo system, using the keys on the remote control and/or front panel, or via the TV using the On-Screen Display (OSD).

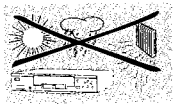
Unpacking

First check and identify the contents of your DVD-Video player package.
You should have the following items.
- DVD-Video player
- Remote Control with batteries
- AC power cord
- Audio/Video cable
- SCART cable
- Instructions for use

If any item is damaged or missing, contact your retailer or Philips.

Keep the packaging materials; you may need them to transport your player in the future.

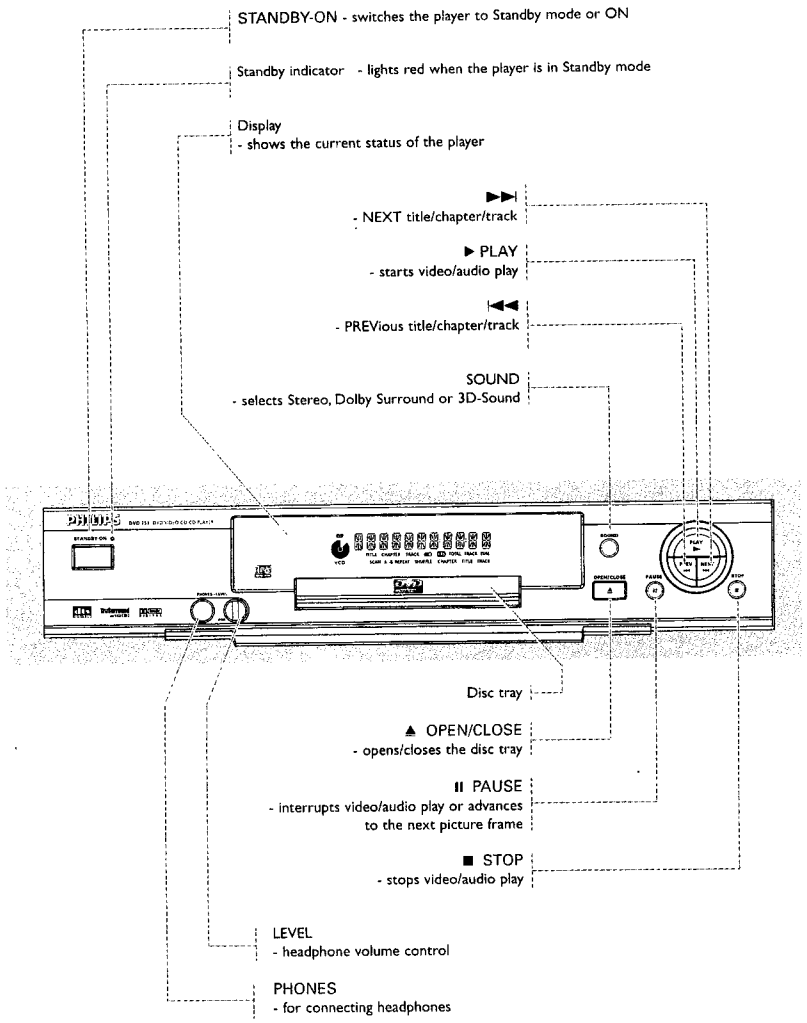
Placement



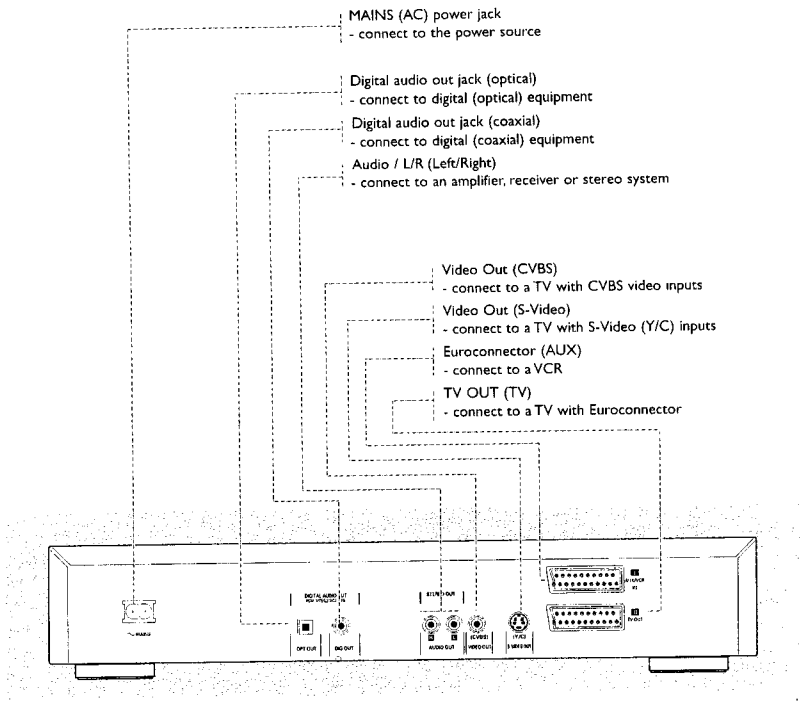
- Place the player on a firm, flat surface.
- Keep the player away from domestic heating equipment and direct sunlight.
- In a cabinet, allow about 2.5 cm (1 inch) of free space all around the player for adequate ventilation.
- If the DVD-Video player cannot read CDs/DVDs correctly, use a commonly available cleaning CD/DVD to clean the lens before taking the DVD-Video player to be repaired. Other cleaning methods may destroy the lens. Always keep the tray closed to avoid dust on the lens.
- The lens may cloud over when the DVD-Video player is suddenly moved from cold to warm surroundings. Playing a CD/DVD is not possible then. Leave the DVD-Video player in a warm environment until the moisture evaporates.

Functional overview

Front panel

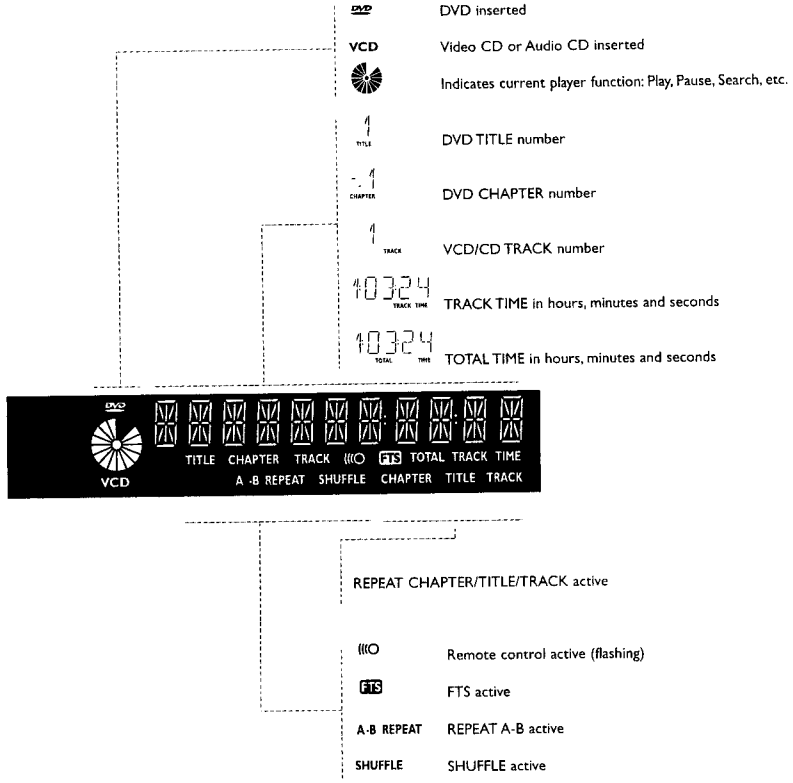

STANDBY-ON - switches the player to Standby mode or ON
Standby indicator - lights red when the player is in Standby mode
Display
- shows the current status of the player
▶▶|
- NEXT title/chapter/track
▶ PLAY
- starts video/audio play
|◀◀
- PREVious title/chapter/track
SOUND
- selects Stereo, Dolby Surround or 3D-Sound
Disc tray
▲ OPEN/CLOSE
- opens/closes the disc tray
II PAUSE
- interrupts video/audio play or advances to the next picture frame
■ STOP
- stops video/audio play
LEVEL
- headphone volume control
PHONES
- for connecting headphones

Rear panel

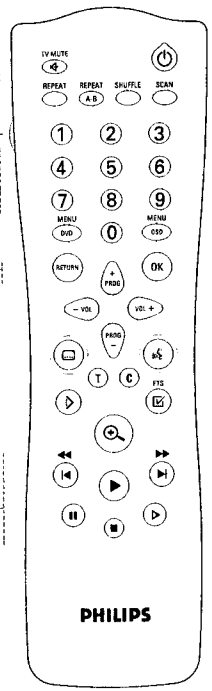

MAINS (AC) power jack
- connect to the power source
Digital audio out jack (optical)
- connect to digital (optical) equipment
Digital audio out jack (coaxial)
- connect to digital (coaxial) equipment
Audio / L/R (Left/Right)
- connect to an amplifier, receiver or stereo system
Video Out (CVBS)
- connect to a TV with CVBS video inputs
Video Out (S-Video)
- connect to a TV with S-Video (Y/C) inputs
Euroconnector (AUX)
- connect to a VCR
TV OUT (TV)
- connect to a TV with Euroconnector

Caution: Do not touch the inner pins of the jacks on the rear panel connectors. Electrostatic discharge may cause permanent damage to the unit.

Display

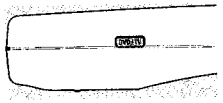


Remote control (Universal)



TV MUTE
- DVD-mode: selects Stereo, Dolby Surround, 3D Sound reproduction
- TV-mode: mute ON/OFF

DVD/TV switch
- DVD mode/TV mode selector**



0-9 numerical key pad

RETURN
- go back to previous menu

OK
- acknowledge menu selection

◀◀ |◀
- search backward* / previous chapter or track

▶
- play

▶▶ ▶|
- search forward* / next chapter or track

II
- pause playback temporarily / frame-by-frame playback

■
- stop

▷
- slow motion

STANDBY-ON

REPEAT
- repeat chapter, track, title, disc

REPEAT A-B
- repeat sequence

SHUFFLE
- playback tracks in random order

SCAN
- playback of the first 10 seconds of each chapter within a title (DVD) or the first 10 seconds of each track on a disc (VCD/CD)

MENU DVD
- access menu of a DVD

MENU OSD
- access or remove On-screen display
- bit rate indicator*

PROG +/-
- DVD mode: up/down cursor movement
- TV mode: Program up/down

VOL +/-
- DVD mode: left/right cursor movement
- TV mode: Volume up/down

- subtitle language selector
- audio language selector

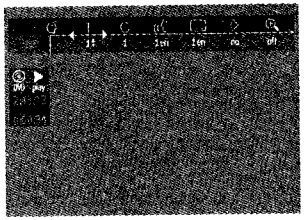
T
- select title

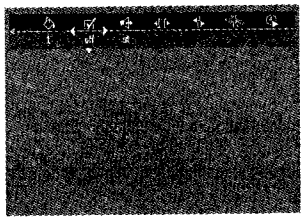
C
- select chapter

- activate FTS
- select DVD camera angle
- enlarge video image

* Press key for about 1 second
** Press and hold while you press mute/VOL/PROG keys for compatible TVs
Please refer to list of Remote Control Setup Codes For Television from page 360 to 363)

On screen display information





Menu bar/Status window

- Personal Preferences
- Title/Track
- Chapter/Index
- Audio language
- Subtitle language
- Angle
- Zoom
- Color Setting (Smart Picture)
- Video Program
- Sound
- Picture by Picture
- Slow motion
- Fast motion
- Time search

Status window icons

The status window displays the current status of the player and appears with the first part of the menu bar. (You must activate this in the Features Menu - see Personal Preferences for details).

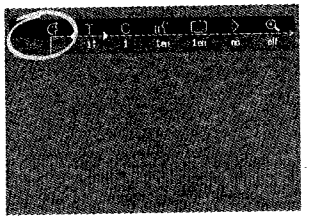
General

Disc type

Tray status

Default screen

The default screen is displayed when the player is in STOP mode.
It may contain a 'Status Window' and a 'Temporary Feedback Field'. This gives information concerning prohibited actions, playback modes, available angles, etc.



Temporary Feedback Field icons

- Scan
- Repeat All
- Repeat Title
- Repeat Track
- Repeat Chapter
- Shuffle
- Shuffle Repeat
- Repeat A to end
- Repeat A-B
- Angle
- Child Lock On
- Child Safe
- Resume
- Action prohibited

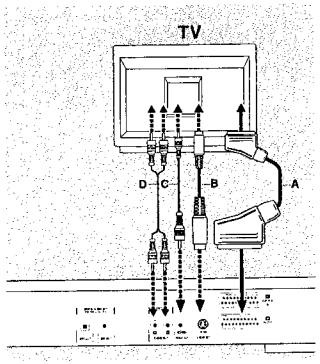
Preparation

General notes

- Depending on your TV and other equipment you wish to connect, there are various ways you could connect the player. Possible connections are shown in the following drawings.
  Please refer to the manuals of your TV,VCR, Stereo System or other devices as necessary to make the best connections.
- Do not connect your DVD-player via your VCR. The video quality could be distorted by the copy protection system.
- For better sound reproduction, connect the player's audio out jacks to the audio in jacks of your amplifier, receiver, stereo or A/V ,equipment. See 'Connecting to optional equipment'.

Caution: Do not connect the player's audio out jack to the phono in jack of your audio system.

Connecting to a TV



- Connect the Euroconnector to the corresponding connector on the TV using the Euroconnector cable supplied ***(A)***.

If your TV is not equipped with a Euroconnector you can select one of the following alterative connections:

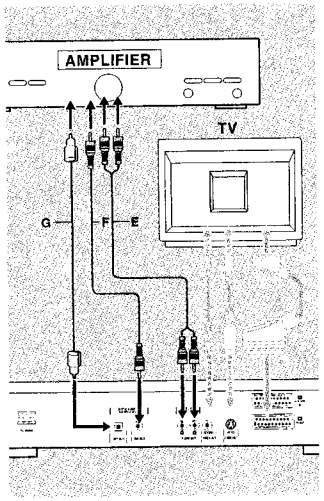
S-Video (Y/C) connection

1. Connect the S-Video jack on the DVD-player to the S-Video in jack on the TV using an optional S-Video cable ***(B)***.
2. Connect the audio Left and Right out jacks to the audio left/right in jacks on the TV ***(D)***.

Video CVBS connection

1. Connect the Video out (CVBS) jack to the video in jack on the TV using the video cable supplied ***(C)***.
2. Connect the audio Left and Right out jacks to the audio left/right in jacks on the TV ***(D)***.

Connecting to optional equipment



Connecting to an amplifier equipped with two channel analog stereo

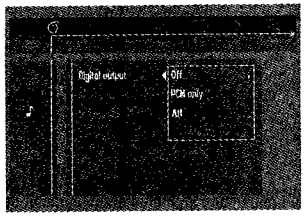
- Connect the audio Left and Right out jacks of the DVD player to the audio left and right in jack on your amplifier, receiver or stereo system, using an optional audio cable ***(E)***.

Connecting to an amplifier equipped with two channel digital stereo (PCM)

1 Connect the player's digital audio out jack (optical ***G*** or coaxial ***F***) to the corresponding in jack on your amplifier.
Use an optional digital (optical ***G*** or coaxial ***F***) audio cable.
2 You will need to activate the player's digital output (see 'Personal Preferences').

Connecting to an A/V receiver equipped with a multi-channel decoder (Dolby Digital™(AC-3), MPEG 2 and DTS)

Digital Multi-channel sound
Digital multi-channel connection provides the best sound quality. For this you need a multi-channel A/V receiver that supports one or more of the audio formats supported by your DVD player (MPEG 2, Dolby Digital™, (AC-3) and DTS). Check the receiver manual and the logos on the front of the receiver.



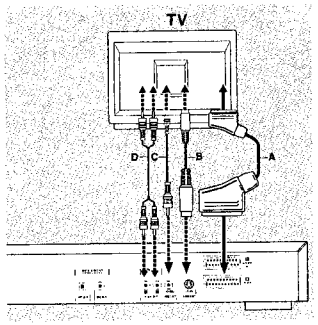
1 Connect the DVD player's digital audio output (optical ***G*** or coaxial ***F***) to the corresponding input on the receiver using an optional digital (optical ***G*** or coaxial ***F***) audio cable.
2 You will need to activate the player's digital output (see 'Personal Preferences').

Note: If the audio format of the digital output does not match the capabilities of your receiver, the receiver will produce a strong, distorted sound or no sound at all. The selected audio format of the DVD is displayed in the Status Window when the Menu OSD is activated or Audio button is activated.
Six Channel Digital Surround Sound via digital connection can only be obtained if your receiver is equipped with a Digital Multi-channel decoder.
To see the selected audio format of the current DVD in the Status Window, press the MENU OSD or the Audio Language selector button.

Cinemalink

This DVD player is equipped with cinemalink feature (from Philips) which allows a more complete control of your home audio/video (AV) equipment.

Cinemalink interconnection plug & play will enable the AV system to recognise the users intention and automatically switch the necessary controls or input source accordingly. This will reduce the necessity of having multiple control inputs for all AV equipments (eg. TV and Amplifier).

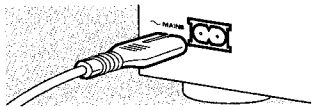


Connecting to an amplifier equipped with Dolby Surround™

Dolby Surround sound
1 Connect the player to the TV, then connect the player's audio Left and Right out jacks to the corresponding in jacks on the Dolby Surround™ Audio/Video receiver, using the audio/video cable supplied ***(D)***.

If your amplifier is equipped with a Dolby Digital™ decoder,
- Connect the player as described in 'Connecting to an A/V receiver with multi-channel decoder'.

If your TV is equipped with a Dolby Surround™ decoder,
- Connect the player to the TV as described in 'Connecting to a TV'.

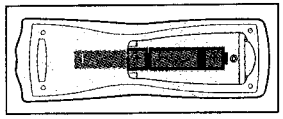


Connecting the power cord

1 Plug the female end of the supplied power cord into the Mains (AC) jack on the rear of the player.
2 Connect the other end of the cord to an AC outlet.

Note: When the player is in the "STANDBY" mode, it is still consuming some power. If you wish to disconnect your player completely from the power, unplug the power cord from the AC outlet.

Caution: Only qualified service personnel should remove the cover or attempt to service this device.



Remote control battery installation

Loading the batteries

1 Open the battery compartment cover.
2 Insert batteries as indicated inside the battery compartment.
3 Close the cover.

Caution: Do not mix old and new batteries. Never mix different types of batteries (standard, alkaline, etc.)

NTSC/PAL Settings

You can switch the NTSC/PAL setting of the DVD player to match the video signal of your TV. This setting only affects the television's on-screen display that shows the stop and setup modes. You may select either NTSC or PAL. To change the DVD player setting to PAL or NTSC, follow the steps below.

1 Unplug the DVD player from the mains.
2 Press and hold ■ and ▶▶| on the front of the DVD player. While holding ■ and ▶▶|, plug in the mains.
3 After PAL or NTSC appears on the display panel of the DVD player, release ■ and ▶▶| at the same time. The PAL or NTSC that appears on the display panel indicates the current setting.
4 To change the setting, press ▶▶| within three seconds. The new setting (PAL or NTSC) will appear on the display panel.

General explanation

About this manual

This manual gives the basic instructions for operating this DVD player. Some DVDs require specific operation or allow only limited operation during playback. In these cases, the player may not respond to all operating commands. When this occurs, please refer to the instructions contained with the DVD. When the symbol ⊘ appears on the TV screen, the operation is not permitted by the player or the disc.

Remote control operation

- Unless otherwise stated, all operations can be carried out with the remote control. Always point the remote control directly at the player, making sure there are no obstructions in the path of the infrared beam.
  When there are corresponding keys on the front panel of the player, they can also be used.

Menu bar operation

- A number of operations can be carried out via the menu bar on the screen. The menu bar can be accessed by pressing any of the following keys on the remote control: MENU OSD, T, C, Angle, Audio Language, Subtitle Language and Zoom.
- The following functions are available via the menu bar:
  - Personal Preferences
  - T Title/Track
  - C Chapter/Index
  - Audio language
  - Subtitle language
  - Angle
  - Zoom
  - Color Setting (Smart Picture)
  - Video Program
  - Sound
  - Picture by Picture
  - Slow motion
  - Fast motion
  - Time search
- The various items can be selected by pressing the **MENU OSD** button, then the ▽/△ keys or by pressing relevant keys on the remote control.
- Pressing **MENU OSD** while the menu bar is displayed will clear the menu bar from the screen.
- When selecting an item in the menu bar, the selected item will be highlighted and the appropriate cursor keys to operate this item will be displayed below the icon.
- < or > indicates that more items are available at the left/right of the menu bar. Press ◁ or ▷ to select these items.

Turning On the power

1 Switch on the TV and select the video input channel for your DVD Video player.
2 Press **ON** button.

Initial Setup (Virgin Mode)

General

In 'Initial Setup' you may have to set your preferences for some of the player's features. *(not applicable for all models)*

Operation

After switching on the player for the very first time, the 'Initial Setup Screen' will appear.
The menu for the first item to be set is displayed and the first option is highlighted.

- Use the ▽ △ keys to go through the options in the menu.
  The icon of the selected option will be highlighted.
- Use **OK** to confirm your selection and to go to the next menu.

Note: Preferences have to be set in the order in which the item menus will appear on the screen.
The 'Initial Setup' screen will only disappear after the settings for the last item have been confirmed.
If any keys other than ▽ △ or **OK** *are pressed,* ⊘ *will appear on the screen.*
If the player is switched off while setting personal preferences, all preferences have to be set again after switching the player on again.

The following items may have to be set in Initial Setup:

Menu language

The On Screen Menus will be displayed in the language you choose. You can choose from different languages.

Audio language

The sound will be in the language you choose if it is available on the disc in play. If the language you select is not available, speech will revert to the first spoken language on the disc. You can choose from different languages.

Subtitle language

The subtitles will be in the language you choose if it is available on the disc in play. If the language you select is not available, subtitles will revert to the first subtitle language on the disc. You can choose from different languages.

TV Shape

If you have a wide screen (16:9) TV, select 16:9.
If you have a regular (4:3) TV, select 4:3.
If you have a 4:3 TV, you can also select between:
Letterbox for a 'wide-screen' picture with black bars top and bottom, or Pan Scan, for a full-height picture with the sides trimmed. If a disc has Pan Scan, the picture then moves (scans) horizontally to keep the main action on the screen.

Country

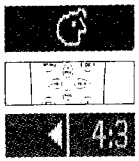
Select your country. This also is used as input for the 'Parental Control' feature (see 'Access Control').

Note: All these items may have to be set during 'Initial Setup'. After that, they can always be changed in the Personal Preferences Menu.

Personal Preferences

You can set your personal preferences for some of the player features.

General operation:



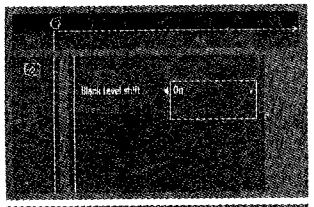
- Press **MENU OSD** on the remote control.
- Select in the menu bar.
  ➤ The Personal Preferences menu appears.
- Use the ◁ ▷ ▽ △ keys to toggle through the menus, submenus and submenu options.
  ➤ When a menu item is selected, the cursor keys (on the remote control) to operate the item are displayed next to the item.
- Press **OK** to confirm and return to the main menu.

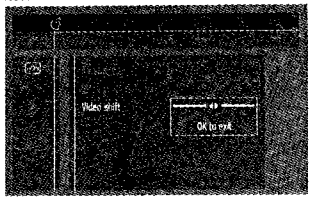
The following items can be adapted:

Picture

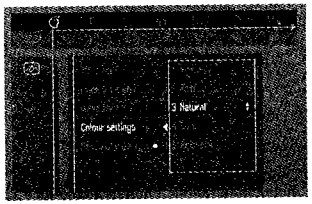
- **TV Shape**
  See 'Initial Setup'

- **Black level shift (NTSC only)**
  Select ON for adapting the color dynamics to obtain richer contrasts.





- **Video shift**
  The factory centers the video on your screen. Use this setting to personalize the position of the picture on your TV by scrolling it to the left or right.



- **Color settings (SCART connection)**
  You can select one of five predefined sets of color settings (SCART connection only) and one set (Personal) which you can define yourself.

- **Personal color**
  Allows you to fine-tune the selected color settings (SCART connection only) saturation, brightness and contrast.

Sound

- **Digital output**
  Factory setting: ALL. This means that both coaxial and optical outputs are switched on. If you are not connecting equipment with a digital input, change the setting to OFF.
  If your equipment doesn't include a digital multi-channel decoder, set the digital output to PCM (Pulse Code Modulation). Both coaxial and optical outputs are switched on.

- **Analog output**
  Select Stereo, Dolby Surround or 3D sound.

- **Night Mode**
  Optimizes the dynamics of the sound with low volume playback.

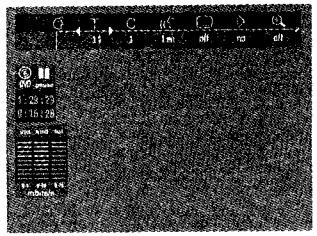
- **Karaoke vocal**
  Put this setting to ON only when a multi-channel karaoke DVD is being played. The karaoke channels on the disc will then be mixed to a normal stereo sound.

Language

Select the required Menu, Audio and Subtitle language. See 'Initial Setup'. Audio language and Subtitle language can also be adapted via the Menu bar on the screen.

Features

- **Access Control**
  Access Control contains the following features:
  Child Lock - When Child Lock is set to ON, a 4-digit code needs to be entered in order to play discs.
  Parental control - Allows the conditional presentation of DVDs containing Parental Control information (see 'Access Control').

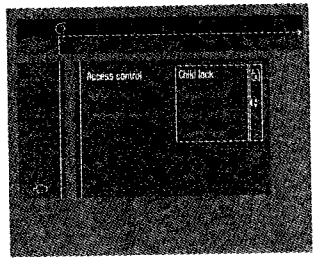


- **Status Window**
  Displays the current status of the player and is displayed with the menu bar. When disc playback is stopped, it is displayed with the 'Temporary Feedback Field' in the default screen. See 'On-Screen Display' information;
  Factory setting is ON. Select OFF to suppress display of the Status Window.

- **Bit Rate Indicator**
  When activated, the bit rate for video, audio as well as total bit rate is displayed. This is only applicable during playback of DVD and SVCD disc.

- **Beeper** *(only available in certain countries)*
  The beeper can be set to ON or OFF.

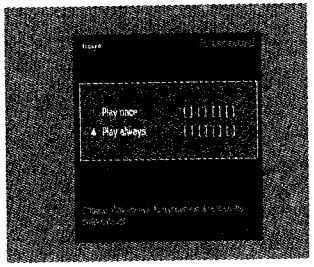
Access control; child lock (DVD and VCD)



Activating/deactivating the child lock

1 When disc playback is stopped, select **ACCESS CONTROL** in the features menu using the ▽/△ keys.
2 Enter a 4-digit code of your own choice.
3 Enter the code a second time.
4 Move to "Child Lock" using the ▽/△ keys.
5 Move to LOCK/UNLOCK using the ▷ key.
6 Select LOCK using the ▽/△ keys.
7 Press **OK** or ◁ to confirm, then press ◁ again to exit the menu.
➤ Now unauthorized discs will not be played unless the 4-digit code is entered.
8 Select UNLOCK to deactivate the Child Lock.

Note: Confirmation of the 4-digit code is necessary when:
- The code is entered for the very first time (see above),
- The code is changed (see 'Changing the 4-digit code'),
- The code is cancelled (see 'Changing the 4-digit code').



Authorizing discs

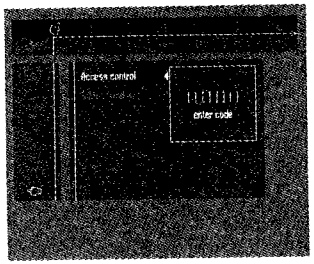
● Insert the disc. See 'Loading disc'.
➤ The 'child protect' dialog will appear.
You will be asked to enter your secret code for 'Play Once 'or 'Play Always.' If you select 'Play Once', the disc can be played as long as it is in the player and the player is ON. If you select 'Play Always', the disc will become child safe (authorized) and can always be played, even if the Child Lock is set to ON.

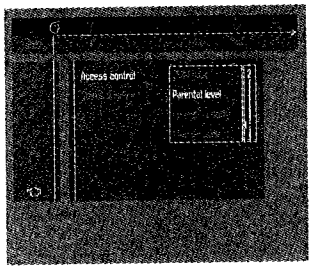
Notes: The player memory maintains a list of 50 authorized ('Child safe') disc titles. A disc will be placed in the list when 'Play Always' is selected in the 'child protect' dialog. Each time a 'child safe' disc is played, it will be placed on top of the list. When the list is full and a new disc is added, the last disc in the list will be removed from the list.
Double sided DVDs may have a different ID for each side. In order to make the disc 'child safe', each side has to be authorized.
Multi-volume VCDs may have a different ID for each volume. In order to make the complete set 'child safe', each volume has to be authorized.

Deauthorizing discs

● Insert the disc. See 'Loading disc'.
➤ Playback starts automatically.
● Press ■ while ☺ is visible.
➤ The ☹ will appear and the disc is now deauthorized.

Access control; Parental control (DVD-Video only)





Movies on DVDs may contain scenes not suitable for children. Therefore, disc may contain 'Parental Control' information which applies to the complete disc or to certain scenes on the disc. These scenes are rated from 1 to 8, and alternative, more suitable scenes are available on the disc. Ratings are country dependent. The 'Parental Control' feature allows you to prevent discs from being played by your children or to have certain discs played with alternative scenes.

Activating/Deactivating Parental Control

1 When disc playback is stopped, select **ACCESS CONTROL** in the features menu using the ▽/△ keys.
2 Enter your 4-digit code. If necessary, enter the code a second time.
3 Move to Parental Control using the ▽/△ keys.
4 Move to **VALUE ADJUSTMENT** (1-8) using the ▷ key.
5 Then use the ▽/△ keys or the numerical keys on the remote control to select a rating from 1 to 8 for the disc inserted.

Rating 0 (displayed as '– –'):
Parental Control is not activated. The Disc will be played in full.

Ratings 1 to 8:
The disc contains scenes not suitable for children. If you set a rating for the player, all scenes with the same rating or lower will be played. Higher rated scenes will not be played unless an alternative is available on the disc. The alternative must have the same rating or a lower one. If no suitable alternative is found, play will stop and the 4-digit code has to be entered.
6 Press **OK** or ◁ to confirm, then press ◁ again to exit the menu.

Country

1 When disc playback is stopped, select **ACCESS CONTROL** in the features menu using the ▽/△ keys.
2 Enter the 4-digit code.
3 Move to **CHANGE COUNTRY** using the ▽ key.
4 Press the ▷ key.
5 Select a country using ▽/△.
6 Press **OK** or ◁ to confirm, then press ◁ again to exit the menu.

Changing the 4-digit code

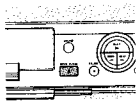
1 When disc playback is stopped, select **ACCESS CONTROL** in the features menu using the ▽/△ keys.
2 Enter the old code.
3 Move to **CHANGE CODE** using the ▽ key.
4 Press the ▷ key.
5 Enter the new 4-digit code.
6 Enter the code a second time and reconfirm by pressing **OK**.
7 Press ◁ to exit the menu.

Note: If you forget your 4 digit code, it can be cancelled by pressing ■ four times in the 'Access Control' dialog. You can then enter a new code (twice!) as described above.

Parental Control Disclaimer

This DVD player features the PARENTAL CONTROL system which is intended to activate when playing DVD discs furnished with certain software coding. This is according to technical standards adopted by the set maker and disc content industries.
Please note that the PARENTAL CONTROL system will not operate a DVD disc which is not furnished with the appropriate software coding.
Also note that at the time of release of this DVD player, certain aspects of the technical standards had not been settled between set makers and the disc industries.
On this basis Philips cannot guarantee functioning of the PARENTAL CONTROL system and denies any liability associated with unintended watching of disc content.
If in doubt, please make sure the disc plays according to your PARENTAL CONTROL settings before you allow children access.

Operation



Loading discs

1 Press **OPEN/CLOSE** on the front of the player. The disc tray opens.
2 Load your chosen disc in the tray, label side up (also when a double sided DVD is inserted). Make sure it is sitting properly in the correct recess.
3 Gently push the tray, or press **OPEN/CLOSE**, to close the tray.

➤ READ appears in the status window and on the player display, and playback starts automatically.

Note: If 'Child Lock' is set to ON and the disc inserted is not in the 'child safe' list (not authorized), the 4-digit code must be entered and/or the disc must be authorized (see 'Access Control').

Playing a DVD-video disc

Playing a title

➤ After inserting the disc and closing the tray, playback starts automatically and the status window and the player display show the type of disc loaded, as well as information about the disc's contents and playing time.
The disc may invite you to select an item from a menu. If the selections are numbered, press the appropriate numerical key; if not, use the ▽/△, ◁/▷ keys to highlight your selection, then press **OK**.
➤ The currently playing title and chapter number are displayed in the menu bar and the player display.
The elapsed playing time is shown in the status window and the player display.

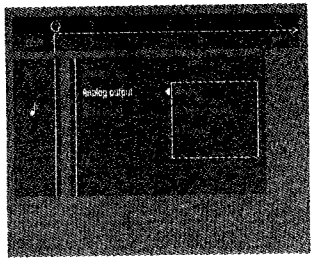
- If required, you can use the **Sound** key to select Stereo, Dolby Surround or 3D-Sound.
  Play may stop at the end of the Title, and the player may return to the DVD menu. To go on to the next title, press ▶.
- To stop play at any other time, press ■.
  ➤ The default screen will appear, giving information about the current status of the player.
- You can resume play from the point at which you stopped play. Press ▶; when you see the Resume icon ▶ on the screen, press ▶ again.
  ➤ The RESUME feature applies not only to the disc in the player, but also to the last four discs you have played. Simply reload the disc, and press ▶; when you see the Resume icon ▶ on the screen , press ▶ again.

Note: Since it is usual for DVD movies to be released at different times in different regions of the world, all players have region codes. Discs can have an optional region code. If you load a disc of a different region code into your player, you will see the region code notice on the screen. The disc will not play and should be removed from the player.

Playing a Video CD

Playing a disc

- After inserting the disc and closing the tray, playback starts automatically and the status window and the player display show the type of disc loaded, as well as information about the disc's contents and playing time.
- The disc may invite you to select an item from a menu. If the selections are numbered, press the appropriate numerical key.
- The currently playing track number is displayed in the menu bar and the player display. The elapsed playing time is shown in the status window and the player display.



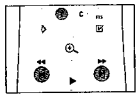
- If required, you can use the **SOUND** key to select Stereo, Dolby Surround or 3D-Sound.
- To stop play at any time, press ■.
  ➤ The default screen will then appear.
- You can resume play from the point at which you stopped play. Press ▶; when you see the Resume icon on the screen I▶, press ▶ again.
  The RESUME feature applies not only to the disc in the player, but also to the last four discs you have played. Simply reload the disc, and press ▶; when you see the Resume icon I▶ on the screen , press ▶ again.

General features

Note: Unless stated otherwise, all operations described are based on remote control operation. A number of operations can also be carried out via the menu bar on the screen (see 'Menu bar operation').

Moving to another title/TRACK

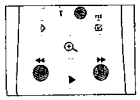
When a disc has more than one title or track (which you can see from both the menu bar and the player display), you can move to another title as follows:



- Press T (title/track), then press ▶I briefly during play to select the next title/track.
- Press T (title/track), then press I◀ briefly during play to return to the beginning of the current title/track. Press I◀ **twice** briefly to step back to the previous title/track.

Moving to another chapter/index

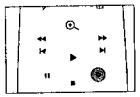
When a title on a disc has more than one chapter or a track has more than one index (which you can see from the player display and on the menu bar), you can move to another chapter/index as follows:



- Press ▶I briefly during play to select the next chapter/index.
- Press I◀ briefly during play to return to the beginning of the current chapter/index. Press I◀ **twice** briefly to step back to the previous chapter/index.
- To go directly to any chapter or index, select C (chapter/index), then enter the chapter/index number using the numerical keys (0-9).

Note: If the number has more than one digit, press the keys in rapid succession.

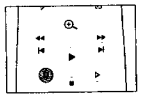
Slow Motion



- Select (Slow motion) in the menu bar.
- Use the ▽ keys to enter the Slow Motion menu.
  ➤ The player will now go into PAUSE mode.
- Use the cursor keys ◁ ▷ to select the required speed: -1, -1/2, -1/4 or -1/8 (backward), or +1/8, +1/4, +1/2 or +1 (forward).
- Select 1 to play at normal speed again.
- If **II** is pressed, the speed will be set to zero (pause).
- To exit slow motion mode, press ▶ and △.

You can also select Slow Motion speeds by using the ▷ button on the remote control.

Still Picture and Frame-by-frame playback



- Select (picture by picture) in the menu bar.
- Use the ▽ key to enter the picture by picture menu.
  ➤ The player will now go into PAUSE mode.
- Use the cursor keys ◁ ▷ to select the previous or next picture frame.
- To exit Picture by picture mode, press ▶ or △.

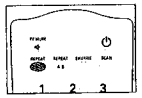
You can also step forward by pressing **II** repeatedly on the remote control.

Search

- Select (Fast motion) in the menu bar.
- Use the ▽ keys to enter the Fast Motion menu.
- Use the ◁ ▷ keys to select the required speed: -32, -8 or -4 (backward), or +4, +8, +32 (forward).
- Select 1 to play at normal speed again.
- To exit Fast Motion mode, press ▶ or △.

To search forward or backward through different speeds, you can also hold down ◀◀ or ▶▶.

Repeat



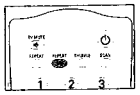
DVD-Video Discs - Repeat chapter/title/disc

- To repeat the currently playing chapter, press **REPEAT**.
  ➤ **REPEAT CHAPTER** appears on the player display.
- To repeat the title currently playing , press **REPEAT** a second time
  ➤ **REPEAT TITLE** appears on the display.
- To repeat the entire disc, press **REPEAT** a third time
  ➤ **REPEAT** appears on the display.
- To exit Repeat mode, press **REPEAT** a fourth time.

CHAPTER REPEAT TITLE REPEAT REPEAT TRACK REPEAT REPEAT

Video CDs - Repeat track/disc

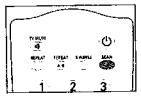
- To repeat the track currently playing , press **REPEAT**.
  ➤ **REPEAT TRACK** appears on the player display.
- To repeat the entire disc, press **REPEAT** a second time.
  ➤ **REPEAT** appears on display and screen.
- To exit Repeat mode, press **REPEAT** a third time.



Repeat A-B

To repeat a sequence in a title:

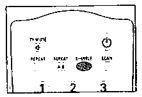
- Press **REPEAT A-B** at your chosen starting point;
  - ➤ **A-** appears briefly on the screen.
- Press **REPEAT A-B** again at your chosen end point;
  - ➤ **A-B REPEAT** appears briefly on the display, and the repeat sequence begins.(**A-B REPEAT** is displayed on the front panel of the player)
- To exit the sequence, press **REPEAT A-B**.



Scan

Plays the first 10 seconds of each chapter/index on the disc.

- Press **SCAN**.
- To continue play at your chosen chapter/index, press **SCAN** again or press ▶.



Shuffle

DVD-Video discs

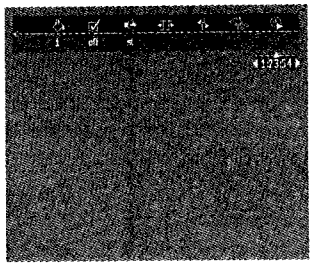
This shuffles the playing order of chapters within a title, if the title has more than one.

- Press **SHUFFLE** during play.
  - ➤ SHUFFLE appears on the screen for about 2 seconds.
- To return to normal play, press **SHUFFLE** again.

Video CDs

This shuffles the playing order of the tracks, if the disc has more than one.

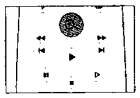
- Press **SHUFFLE** during play.
  - ➤ SHUFFLE appears on the screen for about 2 seconds.
- To return to normal play, press **SHUFFLE** again.



Time search

The Time Search function allows you to start playing at any chosen time on the disc.

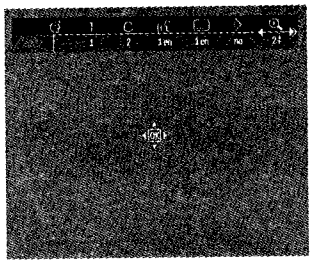
- Select (Time Search) in the menu bar.
- Press ▽.
  - ➤ The player will now go into **PAUSE** mode.
  - ➤ A time edit box appears on the screen, showing the elapsed playing time of the current disc.
- Use the digit keys to enter the required start time. Enter hours, minutes and seconds from left to right in the box.
  - ➤ Each time an item has been entered, the next item will be highlighted.
- Press **OK** to confirm the start time.
  - ➤ The time edit box will disappear and play starts from the selected time position on the disc.



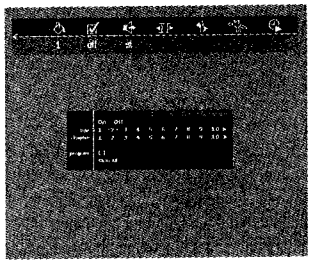
Zoom

The Zoom function allows you to enlarge the video image and to pan through the enlarged image.

- Select (Zoom) in the menu bar.
- Press ▽/△ to activate the ZOOM function and select the required zoom factor: 1.33 or 2 or 4.
  - ➤ The player will go into Pause mode.
  - ➤ The selected zoom factor appears below the Zoom icon in the menu bar and *'Press OK to pan'* appears below the menu bar.



- ➤ The picture will change accordingly.
- Press **OK** to confirm the selection.
  - ➤ The panning icons appear on the screen: △ ▽ ◁ ▷ and **OK**.
- Use the △ ▽ ◁ ▷ keys to pan across the screen.
- When **OK** is pressed only the zoomed picture will be shown on the screen.
- If you wish to zoom at any moment, press (Zoom) and select the required zoom factor as described above.
- To exit Zoom mode:
  - Press ▶.
    - ➤ Playback will resume.
  - Press **STOP**, **MENU OSD**.



FTS-Video

- The FTS-Video function allows you to store your favorite titles and chapters (DVD) and favorite tracks and indexes (VCD) for a particular disc in the player memory.
- Each FTS program can contain 20 items (titles, chapters).
- Each time an FTS program is played it will be placed on top of the list. When the list is full and a new program is added, the last program in the list will be removed from the list.
- The selections can be called up and played at any time.

Storing a FTS-Video Program

- In STOP mode, select **Video FTS** ☑ in the menu bar.
- Press ▽ to open the menu.
  - ➤ The **Video FTS** menu appears.
- Press ◁ or ▷ or **FTS** to select **ON** or **OFF**.

Storing titles/tracks

- Press ▽ to select **TITLES**.
- Use ▷ and ◁ to select the required title.
- Press **OK** if you wish to store the entire title.
  - ➤ The title number will be added to the list of selections.

Storing chapters/indexes

- Press ▽ on the selected title number.
  - ➤ The title number will be marked and the highlight moves to the first available chapter number for this title.
- Use ▷ and ◁ to select the required chapter number.
- Press **OK** to confirm the selection.
  - ➤ The title/chapter selection will be added to the list of selections.
- Press **MENU OSD** to exit the **Video FTS** ☑ menu.

Erasing a FTS-Video Program

- In STOP mode, select **Video FTS** ☑ in the menu bar.
- Use ▽ to select **PROGRAM**.
- Use ▷ and ◁ to select the required selection number.
- Press **OK** to erase the selection.
- Press **MENU OSD** to exit.

If you wish to erase all selections:

- In STOP mode, select **Video FTS** ☑ in the menu bar.
- Use ▽ to select **CLEAR ALL**.
- Press **OK**.
  - ➤ All selections will now be erased.
- Press **MENU OSD** to exit.

Special DVD features

Checking the contents of DVD-Video discs: Menus

For titles and chapters, selection menus may be included on the disc. The DVD's menu feature allows you to make selections from these menus. Press the appropriate numerical key; or use the ▽, △, ▷, ◁ keys to highlight your selection, then press **OK**.

Title menus

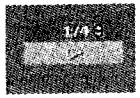
- Press **MENU DVD**.
  ➤ If the current title has a menu, the menu will appear on the screen. If no menu is present in the title, the disc menu will be displayed.
- The menu can list camera angles, spoken language and subtitle options, and chapters for the title.
- To remove the title menu, press **MENU DVD** again.

Disc menu

- Press T then press **MENU DVD**.
  ➤ The disc menu is displayed.
- To remove the disc menu, press T, then press **MENU DVD**.

Camera Angle

If the disc contains sequences recorded from different camera angles, the angle icon appears, showing the number of available angles and the angle being shown currently. You can then change the camera angle if you wish.



- Use the ▽/△ keys to select the required angle in the angle icon.
  ➤ After a small delay, play changes to the selected angle. The angle icon remains displayed until multiple angles are no longer available.

Changing the audio language

- Select (Audio) in the menu bar.
- Press or ▽/△ repeatedly to see the different languages.

Subtitles

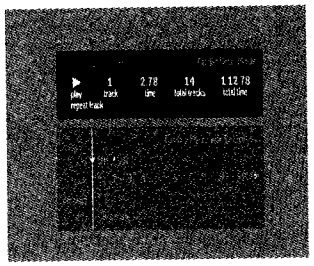
- Select (Subtitle) in the menu bar.
- Press or ▽/△ repeatedly to see the different subtitles.

Special VCD-Features

Playback Control (PBC)

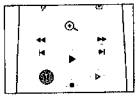
- Load a Video CD with PBC and press ▶.
- Go through the menu with the keys indicated on the TV screen until your chosen passage starts to play. If a PBC menu consists of a list of titles, you can select a title directly.
- Enter your choice with the numerical keys **(0-9)**.
- Press **RETURN** to go back to the previous menu.
- You may also set to the PBC OFF under Personal Preferences.

Playing an audio CD



- After loading the disc, playback starts automatically.
- If the TV is on, the Audio CD screen appears.
- The number of tracks and the total playing time will be shown on the screen.
- During play, the current track number and its elapsed playing time will be shown on the screen and on the player display.
- Playback will stop at the end of the disc.
- To stop play at any other time, press ■.

Pause

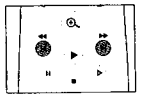


- Press **II** during play.
- To return to play, press ▶ .

Search

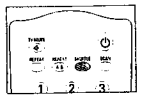
- To search forward or backward through the disc at four times normal speed, hold down ◀◀ or ▶▶ for about one second during play.
  ➤ Search begins, and sound is partially muted.
- To step up to eight times the normal speed, press ◀◀ or ▶▶ again.
  ➤ Search goes to eight times the speed, and the sound is muted.
- To return to four times the normal speed, press ◀◀ or ▶▶ again.
- If the TV is on, search speed and direction are indicated on the screen each time ◀◀ or ▶▶ is pressed.
- To end the search, press ▶ to resume playback or ■ to stop.

Moving to another track



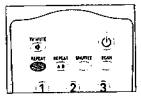
- Press ▶| briefly during play to go to the next track.
- Press |◀ briefly during play to return to the beginning of the current track. Press |◀ **twice** briefly to step back to the previous track.
- To go directly to any track, enter the track number using the numerical keys **(0-9)**.

Shuffle



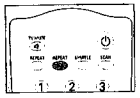
- Press **SHUFFLE** during play.
  - ➤ The order of the tracks is changed.
- To return to normal play, press **SHUFFLE** again.

Repeat track/disc



- To repeat the track currently playing , press **REPEAT**.
  - ➤ **REPEAT TRACK** appears on the display.
- To repeat the entire disc, press **REPEAT** a second time.
  - ➤ **REPEAT** appears on the display.
- To exit Repeat mode, press **REPEAT** a third time.

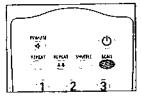
Repeat A-B



To repeat a sequence:

- Press **REPEAT A-B** at your chosen starting point;
  - ➤ **A-** appears on the player display.
- Press **REPEAT A-B** again at your chosen end point;
  - ➤ **A-B** appears on the display, and the sequence begins to play repeatedly.
- To exit the sequence, press **REPEAT A-B** again.

Scan



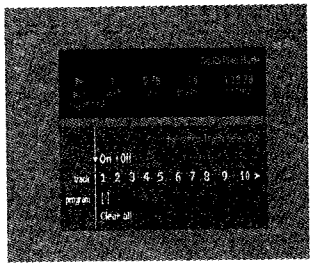
Plays the first 10 seconds of each track on the disc.

- Press **SCAN**.
- To continue play at your chosen chapter/index, press **SCAN** again or press ▶.

FTS Program

- FTS Program allows you to store your favorite tracks for a particular disc in the player memory.
- Each FTS Program can contain 20 tracks.

Storing an FTS Program



1. Load a disc and stop playback.
2. Use ▽ to go to the list of available tracks.
3. Use ◁ or ▷ to select tracks from the list.
   To go directly to any track, enter the track number using the numerical keys **(0-9)**.
4. Store each track by pressing **OK**.
   - ➤ The track numbers will be added to the list of selected tracks.
   - ➤ The number of tracks and the playing time of the program will be shown on the screen and the player display.

When your FTS Program is complete, press ▶ to start play, or △ to go back to Stop mode. In either case, the FTS Program will be automatically memorized.

Switching FTS ON/OFF

1. Use △ ▽ to move to the top.
2. Use ◁ or ▷ to select either ON or OFF.

Erasing a track from an FTS Program

1. Use ▽ to go to the list of selected tracks.
2. Use ◁ and ▷ to select the track number you wish to erase.
3. Press **OK**.
   - ➤ The track number will be erased from the list of selected tracks.

Erasing the complete program

- Use ▽ to select Clear All, then press **OK**.
  - ➤ The complete FTS Program for the disc will be erased.

Before requesting service

If it appears that the DVD-Video player is faulty, first consult this checklist. It may be that something has been overlooked. Under no circumstances attempt to repair the system yourself; this will invalidate the warranty.

Look for the specific symptom(s). Then perform only the actions listed to remedy the specific symptom(s).

Symptom	Remedy
No power	Make sure the mains cord (AC) is properly connected. Check if there is power at the AC outlet by plugging in another appliance.
No picture	Check if the TV is switched on. Check the video connection.
Distorted picture	Check the disc for fingerprints and clean with a soft cloth, wiping from center to edge. Sometimes a small amount of picture distortion may appear .This is not a malfunction.
Completely distorted picture or no color with player menu.	If the picture is distorted completely or if the picture rolls vertically, make sure the NTSC/PAL setting at the DVD player matches the video signal of your television. If your TV video signal is NTSC, select the NTSC setting at the DVD player. If your video signal is PAL, select the PAL setting - see **NTSC/PAL SETTINGS**.
Distorted or Black/White picture with DVD or Video CD.	The disc format does not match your TV's video signal (PAL/NTSC).
No sound	Check audio connections. If you are using a HiFi amplifier, try another sound source.
Distorted sound from HiFi amplifier.	Check to make sure that no audio connections are made to the amplifier phono input.
No audio at digital output.	Check the digital connections. Check the settings menu to make sure the digital output is set to ALL or PCM. Check if the audio format of the selected audio language matches your receiver capabilities.
Disc can't be played.	Ensure the disc label is facing up. Clean the disc. Check if the disc is defective by trying another disc. Check to see if the disc is defective, badly scratched or warped (not flat)
No return to start-up screen when disc is removed.	Reset by switching the player off, then on again. Check to see if the program requires another disc to be loaded.
The player does not respond to the remote control.	Aim the remote control directly at the sensor on the front of the player. Remove any obstacles between the player and the remote control. Inspect or replace the batteries in the remote control.
Buttons do not work.	In order to completely reset the player, unplug the AC cord from the AC outlet.
Player does not respond to all operating commands during playback.	Operations are not permitted by the disc. Refer to the instructions of the disc.
DVD-Video player cannot read CDs/DVDs correctly	Use a commonly available cleaning CD/DVD to clean the lens before taking the DVD-Video player to be repaired.

Cleaning discs

Some problems occur because the disc inside the player is dirty. To avoid these problems clean your discs regularly, in the following way:

- When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the center out.

Caution: Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for analog discs.

4. Service hints

4.1 DVD-Module 218

The DVD mechanism has to be exchanged completely in case of failure. A new or repaired mechanism can be ordered with codenumber 9305 023 61001.
Return the defective unit complete assembled in original package to Philips Consumer Service in Eindhoven.

The monoboard has to be repaired on component level.

4.2 Diagnostic software

In chapter "Diagnostic software" some tests are refering to the SCART functionality.
These tests are for sets with RGB-output.

For sets without RGB-output no SCART connector is mounted.
In these sets the SCART tests will automatically be skipped

4.3 Power Supply options

3122 427 21750		3122 427 21370		3122 427 21760	
110V USA		220V Europe China		Multi voltage A/P	
2261	CAP 330pF	2121	ELCO 100uF 385V	2261	CAP 330pF
2121	ELCO 150uF 250V			2121	ELCO 150uF 400V
3133	Resistor 10M				

4.4 Compair

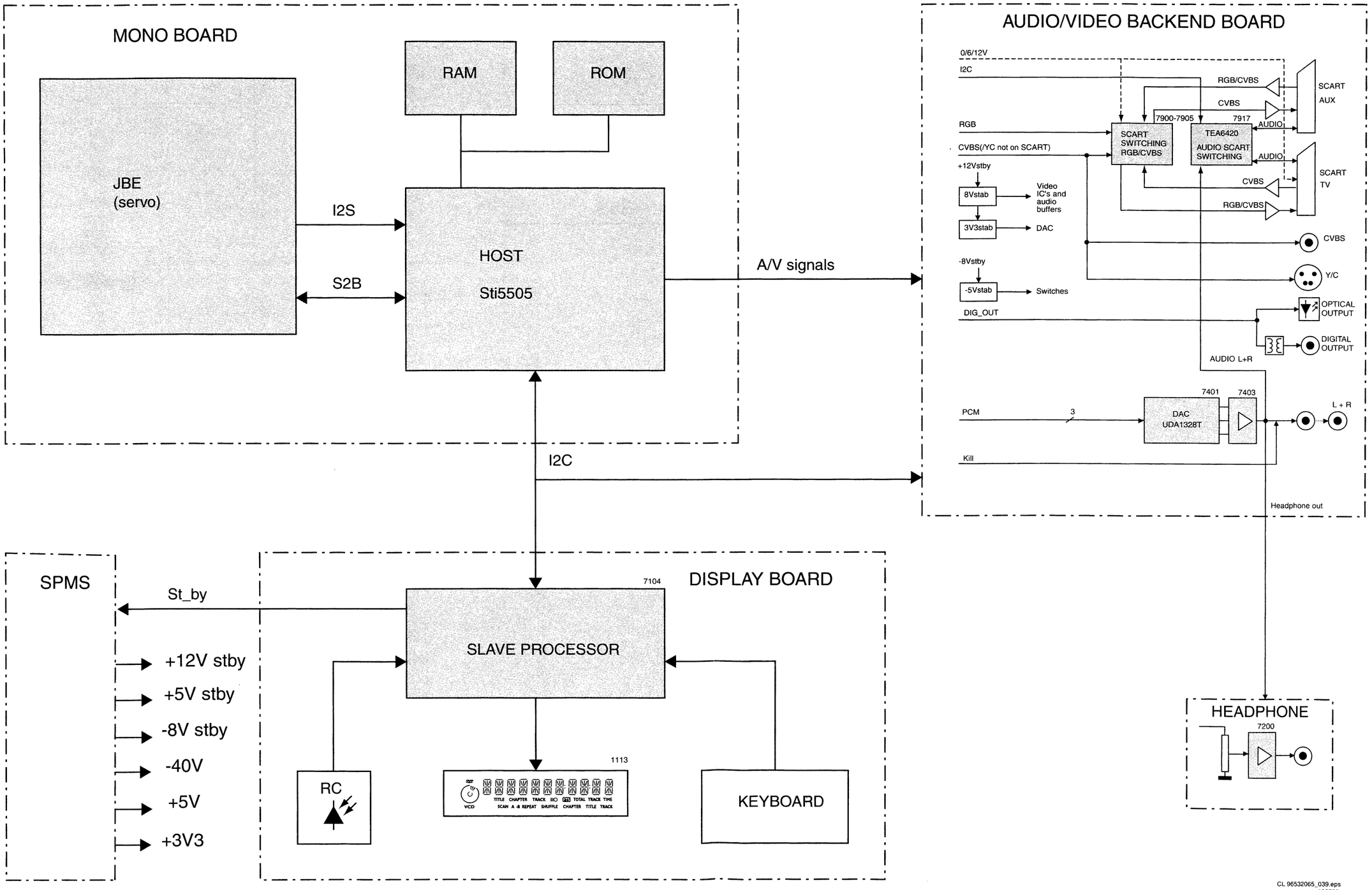
For assistance with the repair process of the monoboard an electronic Fault finding guidance has been developed , this program is called COMPAIR.
This COMPAIR program is available on CDROM.
The Version of the CDROM for repair of the monoboard is V1.3 and can be ordered with codenumber : 4822 727 21637.
This is an update CDROM , so when the COMPAIR CDROM is used for the first time , one has to install the COMPAIR ENGINE CDROM V1.2 first.
The V1.2 CDROM can be ordered with codenumber 4822 727 634 and has to registered after installation , the procedure for registration is explained in the help file of the program and in the booklet from the CDROM.
The cable to connect the monoboard with a PC can be ordered with codenumber 3122 785 90017.
All the hardware and software requirements of the systems necessary for working with COMPAIR is described on the CDROM.

4.5 Monoboard repair

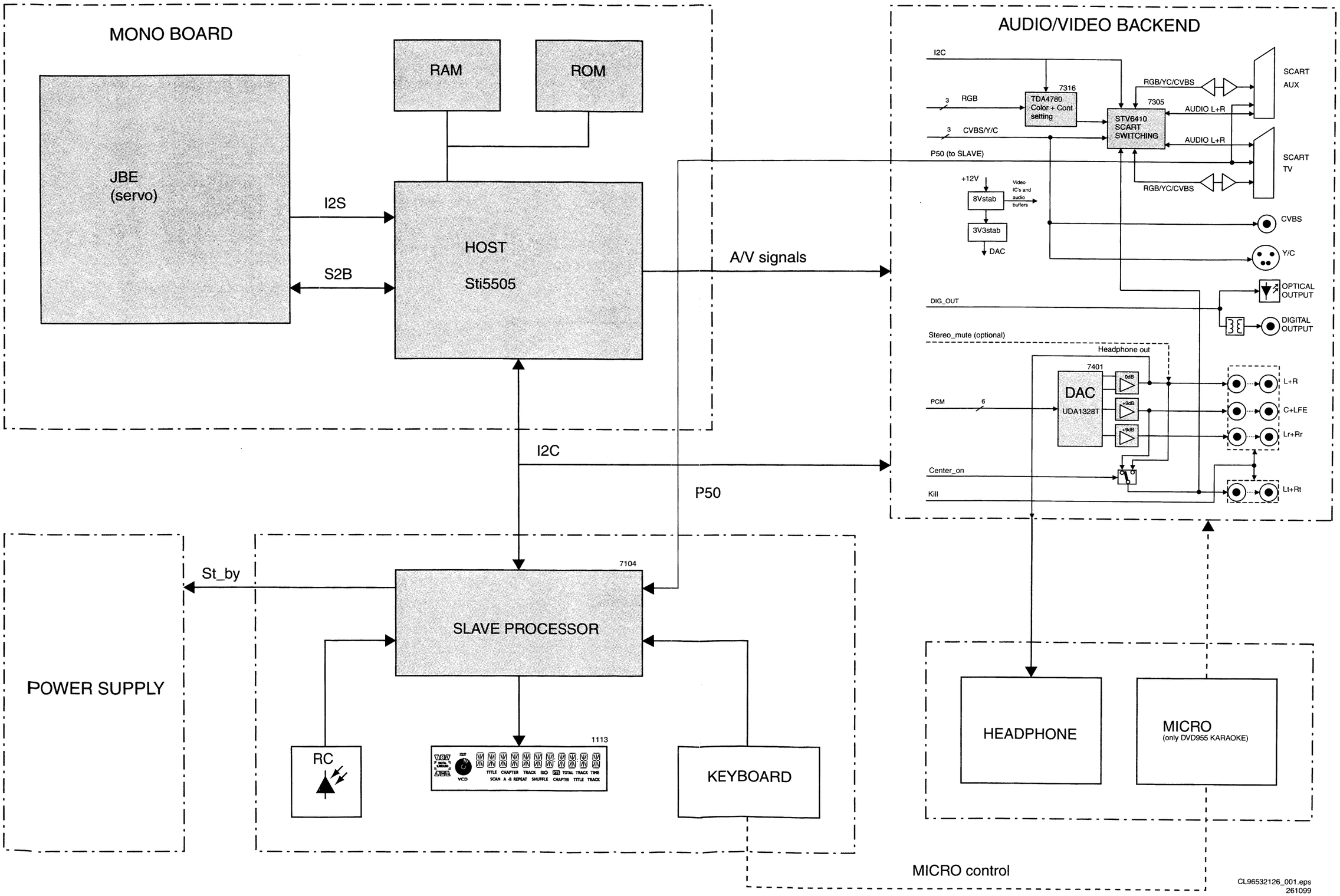
For repair of the monoboard the service manual 3122 785 10045 must be used.

5. Block and wiringdiagram, dismantling, exploded view and oscillograms

Blockdiagram DVD 711 /001



Blockdiagram DVD 751 /001



Dismantling instructions

DISMANTLING INSTRUCTIONS

See exploded view for item numbers

Cover 151
⇒ Remove 7 screws 233
⇒ Lift cover at rearside to remove

mounting ↑ ↓ demounting

Front assy 1
⇒ remove 2 screws 212 (front 1 →frame 213)
⇒ unlock front from frame by releasing successively 3 snaps(on the left, in the middle and on the right)
⇒ put front assy in front of the set(service position)

Display board 1002
⇒ Remove 7 screws 203 (board → front), pay attention to earth spring 300.
⇒ demount board

Headphone board 1006
⇒ Remove volume knob by pulling it forward
⇒ remove 3 screws 209 (board →front)
⇒ demount board

Standby board 1003 and switch assy
⇒ Remove 2 screws 25 → 26(board→ front)
⇒ demount board
⇒ Remove 1 screw 207
⇒ Take out switch assy

DVD MODULE 218
⇒ Remove connections to Mono board
⇒ remove 4 screws 217 (loader bracket 2 → frame 213)
⇒ demount module

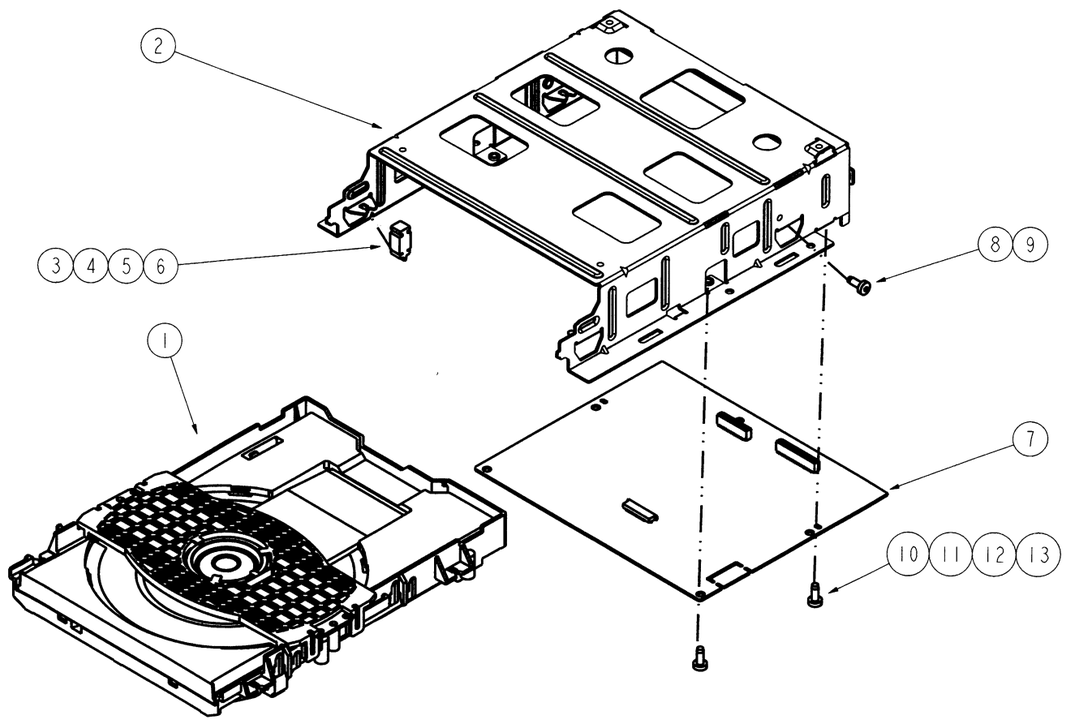
DVD MONO Board 7
⇒ See also exploded view of DVD module
⇒ Remove flex connections to turntabel motor and sledge motor.
⇒ remove 4 screws 10 → 13(mono board 7 → loader bracket 2)
⇒ remove carefully flex connection to OPU and wire connection to tray motor.
⇒ demount board.

LOADER VAL3000 1
⇒ Remove 2 screws 8, 9
⇒ Remove 4 suspensions 3 → 6 from loader bracket

A/V board 1002
⇒ remove flex connections to Mono board
⇒ remove 7 screws 227
⇒ release snaps of 2 spacers 221
⇒ demount board

Power supply unit 1005
⇒ remove connections
⇒ remove 2 screws 222 (board→frame)
⇒ remove screw 225 (mains inled→backplate)
⇒ release snaps of spacers 226 (board→frame)
⇒ demount board

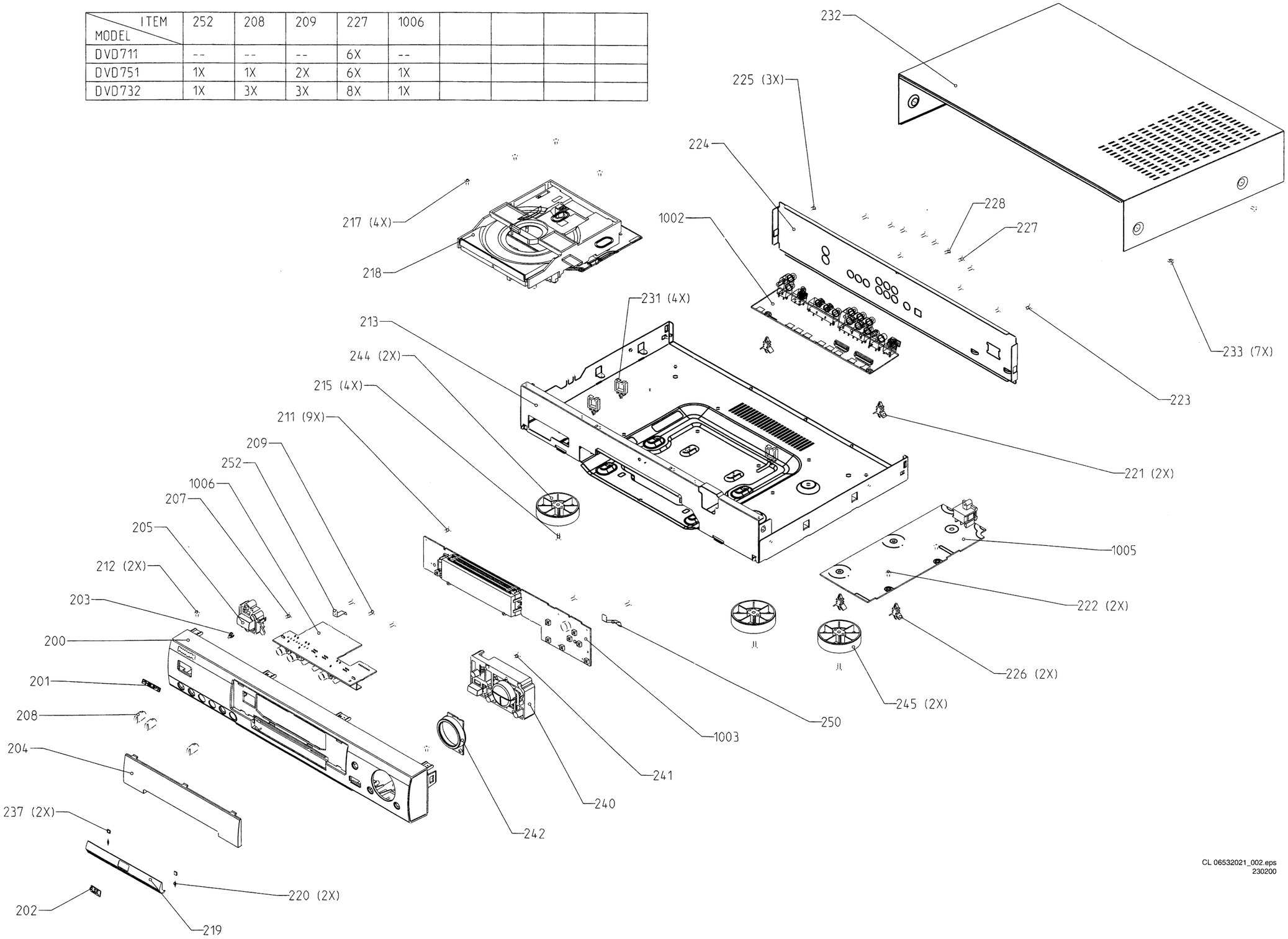
Exploded view DVD MODULE 218



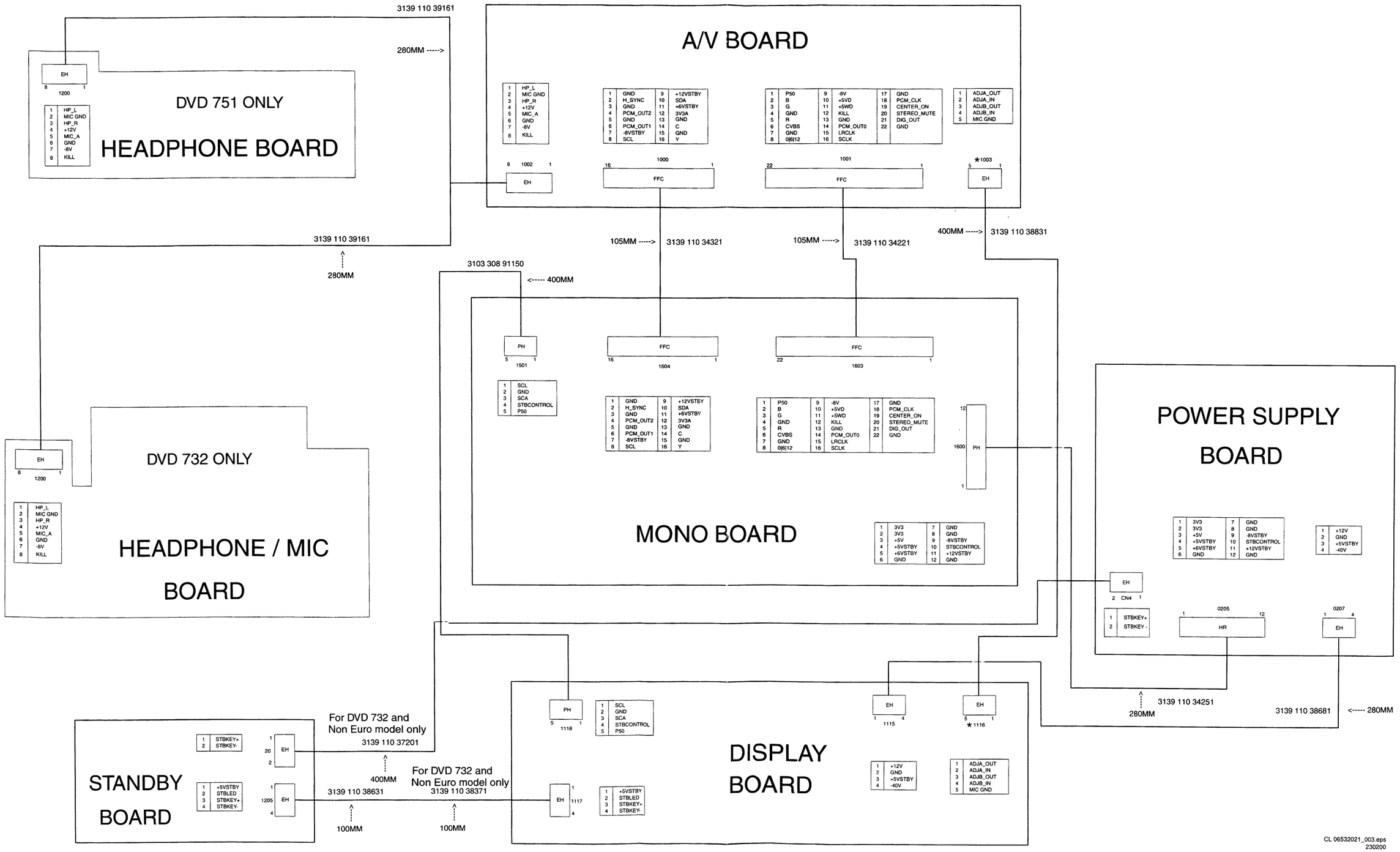
CL 96532070_020.eps
120799

Exploded view

ITEM / MODEL	252	208	209	227	1006				
DVD711	--	--	--	6X	--				
DVD751	1X	1X	2X	6X	1X				
DVD732	1X	3X	3X	8X	1X				



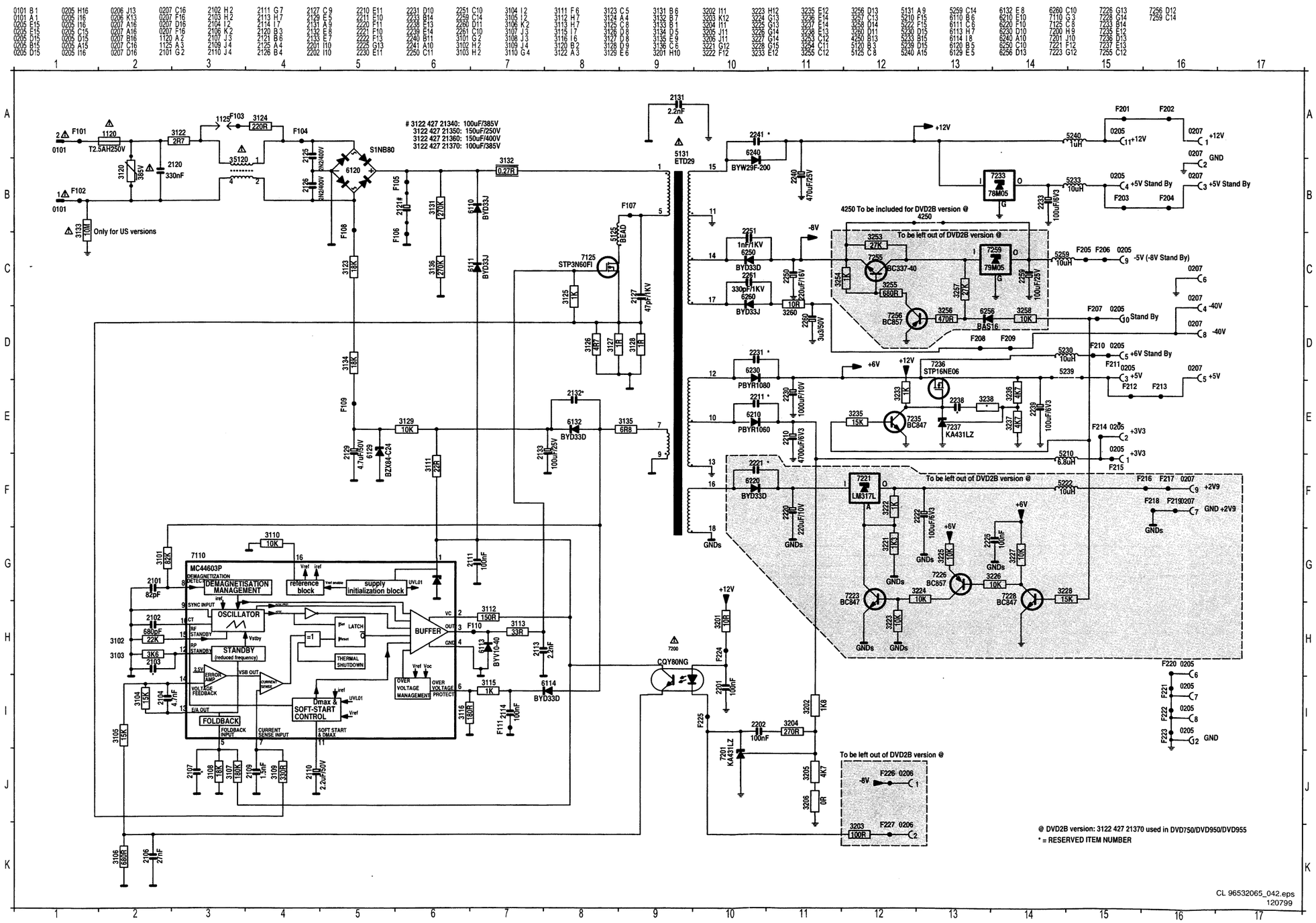
Wiringdiagram


3139 110 39161
280MM ----->
A/V BOARD
DVD 751 ONLY
HEADPHONE BOARD
EH
8 1200 1
1 HP_L
2 MIC GND
3 HP_R
4 +12V
5 MIC_A
6 GND
7 -8V
8 KILL
1 HP_L 2 MIC GND 3 HP_R 4 +12V 5 MIC_A 6 GND 7 -8V 8 KILL
1 GND 2 H_SYNC 3 GND 4 PCM_OUT2 5 GND 6 PCM_OUT1 7 -8VSTBY 8 SCL
9 +12VSTBY 10 SDA 11 +6VSTBY 12 3V3A 13 GND 14 C 15 GND 16 Y
1 P50 2 B 3 G 4 GND 5 R 6 CVBS 7 GND 8 0|6|12
9 -8V 10 +5VD 11 +5WD 12 KILL 13 GND 14 PCM_OUT0 15 LRCLK 16 SCLK
17 GND 18 PCM_CLK 19 CENTER_ON 20 STEREO_MUTE 21 DIG_OUT 22 GND
1 ADJA_OUT 2 ADJA_IN 3 ADJB_OUT 4 ADJB_IN 5 MIC GND
8 1002 1
16 1000 1
22 1001 1
5 ★1003 1
FFC
105MM -----> 3139 110 34321
105MM -----> 3139 110 34221
400MM -----> 3139 110 38831
3139 110 39161
280MM
3103 308 91150
<----- 400MM
PH
5 1501 1
FFC
16 1604 1
FFC
22 1603 1
MONO BOARD
1 SCL 2 GND 3 SCA 4 STBCONTROL 5 P50
1 3V3 2 3V3 3 +5V 4 +5VSTBY 5 +6VSTBY 6 GND
7 GND 8 GND 9 -8VSTBY 10 STBCONTROL 11 +12VSTBY 12 GND
12 1600 1
PH
DVD 732 ONLY
HEADPHONE / MIC BOARD
EH
8 1200 1
1 HP_L 2 MIC GND 3 HP_R 4 +12V 5 MIC_A 6 GND 7 -8V 8 KILL
POWER SUPPLY BOARD
1 3V3 2 3V3 3 +5V 4 +5VSTBY 5 +6VSTBY 6 GND
7 GND 8 GND 9 -8VSTBY 10 STBCONTROL 11 +12VSTBY 12 GND
1 +12V 2 GND 3 +5VSTBY 4 -40V
EH
2 CN4 1
1 STBKEY+ 2 STBKEY -
0205
1 12
HR
0207
1 4
EH
3139 110 34251
280MM
3139 110 38681
<----- 280MM
For DVD 732 and Non Euro model only
3139 110 37201
400MM
3139 110 38631
For DVD 732 and Non Euro model only
3139 110 38371
100MM
100MM
STANDBY BOARD
1 STBKEY+ 2 STBKEY-
1 +5VSTBY 2 STBLED 3 STBKEY+ 4 STBKEY-
1 20 2 EH
1 1205 4 EH
PH
5 1118 1
EH
1 1117 4
1 SCL 2 GND 3 SCA 4 STBCONTROL 5 P50
1 +5VSTBY 2 STBLED 3 STBKEY+ 4 STBKEY-
DISPLAY BOARD
EH
1 1115 4
EH
5 ★1116 1
1 +12V 2 GND 3 +5VSTBY 4 -40V
1 ADJA_OUT 2 ADJA_IN 3 ADJB_OUT 4 ADJB_IN 5 MIC GND
CL 06532021_003.eps
230200

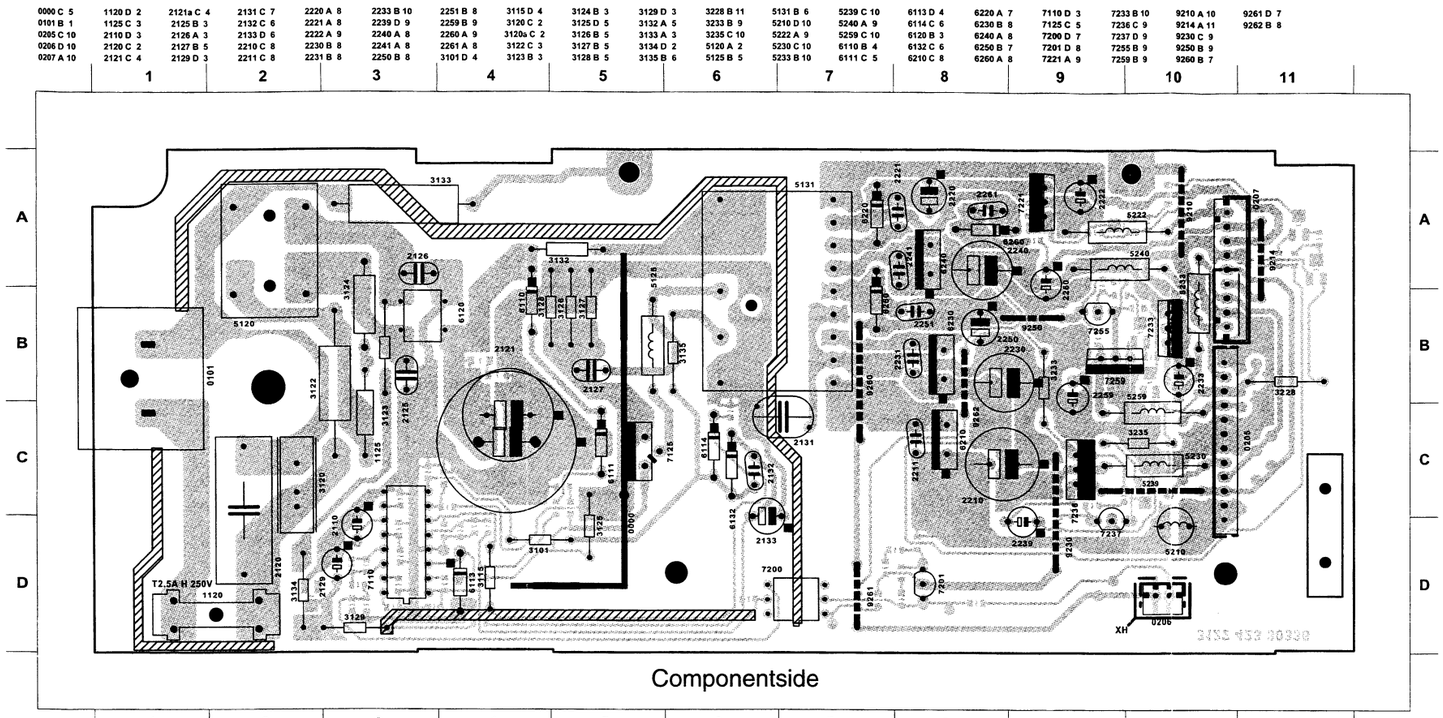
6. Electrical diagrams and Print-layouts

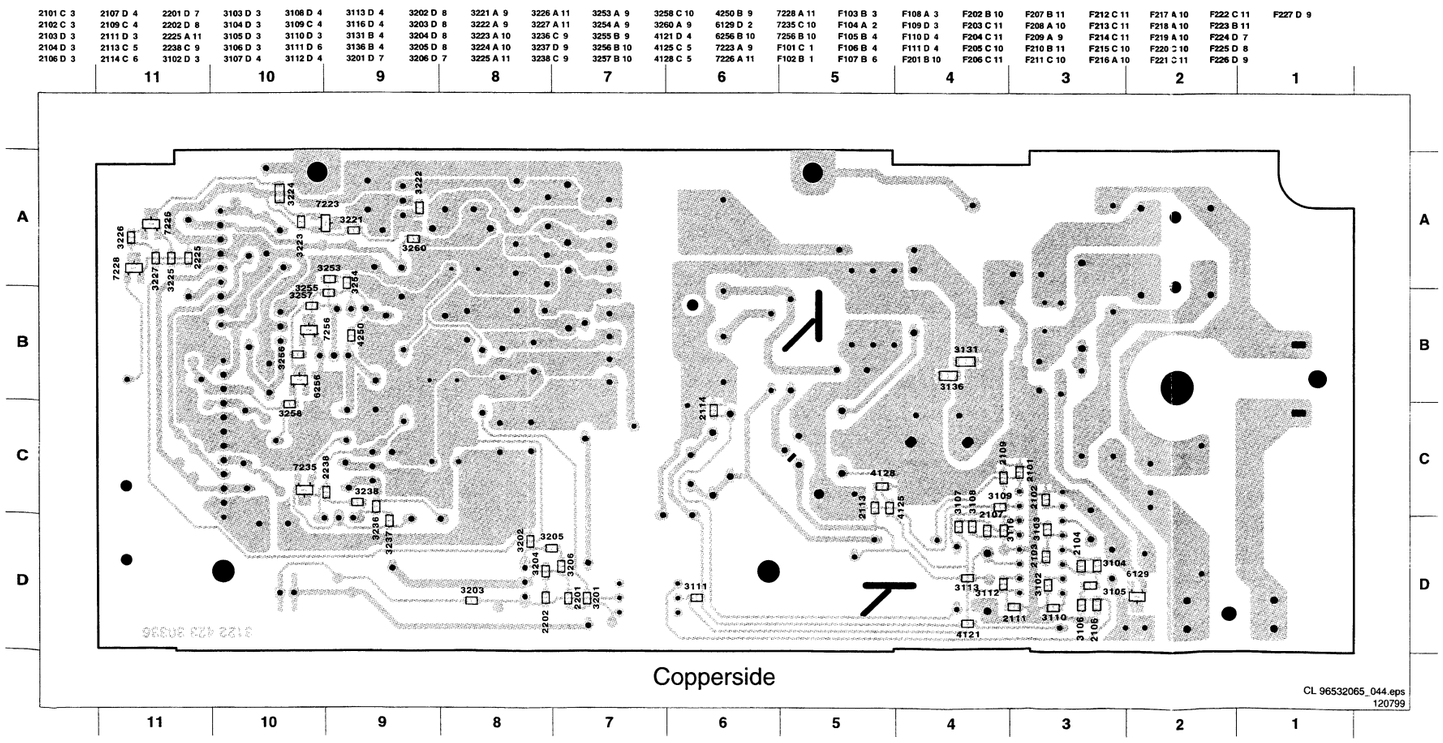
Power supply

POWER SUPPLY 20PS203

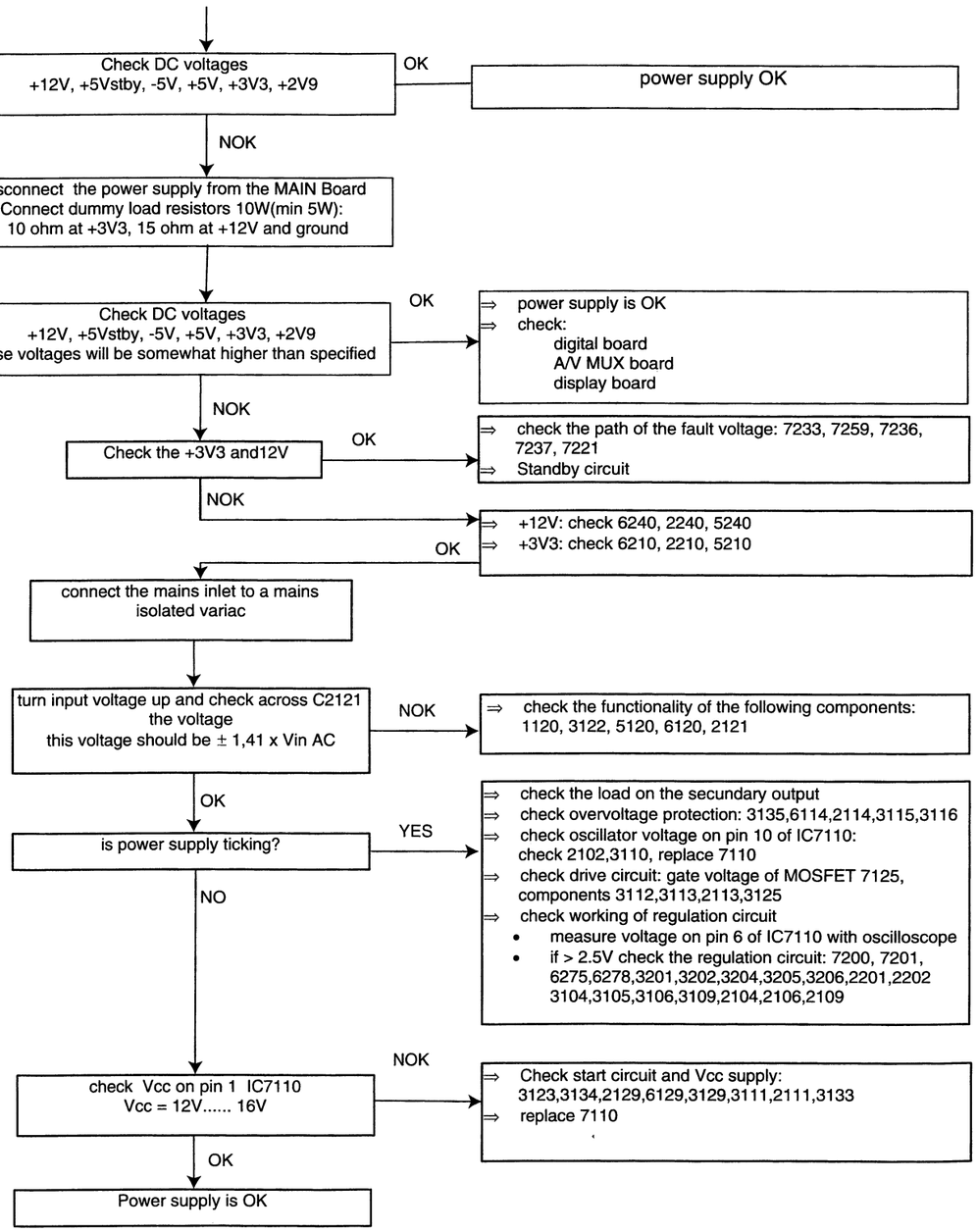


Power supply





TROUBLESHOOTING POWER SUPPLY UNIT 20PS203


Check DC voltages
+12V, +5Vstby, -5V, +5V, +3V3, +2V9
OK
power supply OK
NOK
Disconnect the power supply from the MAIN Board
Connect dummy load resistors 10W(min 5W):
10 ohm at +3V3, 15 ohm at +12V and ground
Check DC voltages
+12V, +5Vstby, -5V, +5V, +3V3, +2V9
These voltages will be somewhat higher than specified
OK
⇒ power supply is OK
⇒ check:
digital board
A/V MUX board
display board
NOK
Check the +3V3 and12V
OK
⇒ check the path of the fault voltage: 7233, 7259, 7236, 7237, 7221
⇒ Standby circuit
NOK
⇒ +12V: check 6240, 2240, 5240
⇒ +3V3: check 6210, 2210, 5210
OK
connect the mains inlet to a mains isolated variac
turn input voltage up and check across C2121
the voltage
this voltage should be ± 1,41 x Vin AC
NOK
⇒ check the functionality of the following components: 1120, 3122, 5120, 6120, 2121
OK
is power supply ticking?
YES
⇒ check the load on the secundary output
⇒ check overvoltage protection: 3135,6114,2114,3115,3116
⇒ check oscillator voltage on pin 10 of IC7110: check 2102,3110, replace 7110
⇒ check drive circuit: gate voltage of MOSFET 7125, components 3112,3113,2113,3125
⇒ check working of regulation circuit
• measure voltage on pin 6 of IC7110 with oscilloscope
• if > 2.5V check the regulation circuit: 7200, 7201, 6275,6278,3201,3202,3204,3205,3206,2201,2202 3104,3105,3106,3109,2104,2106,2109
NO
check Vcc on pin 1 IC7110
Vcc = 12V..... 16V
NOK
⇒ Check start circuit and Vcc supply: 3123,3134,2129,6129,3129,3111,2111,3133
⇒ replace 7110
OK
Power supply is OK

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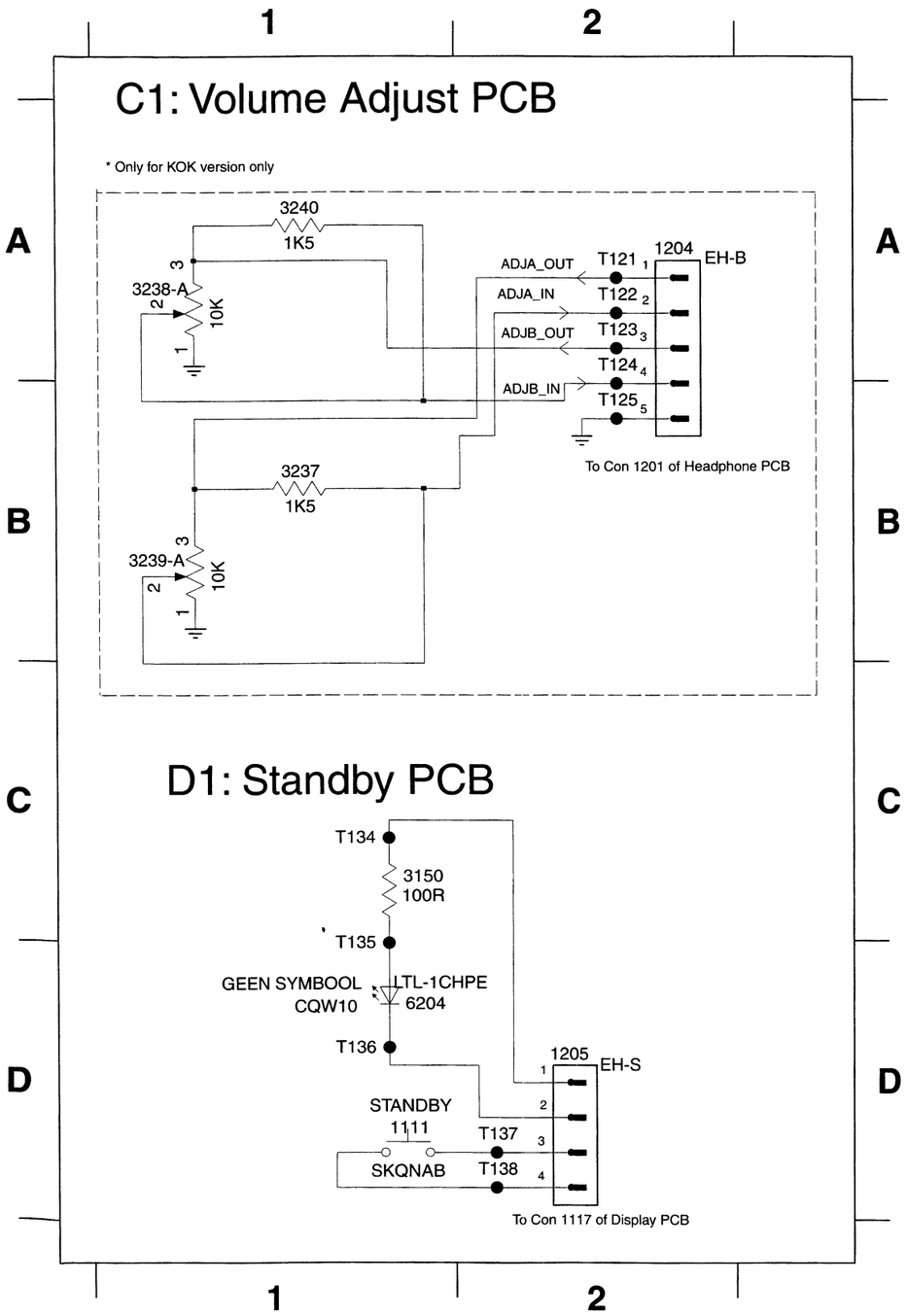
130799

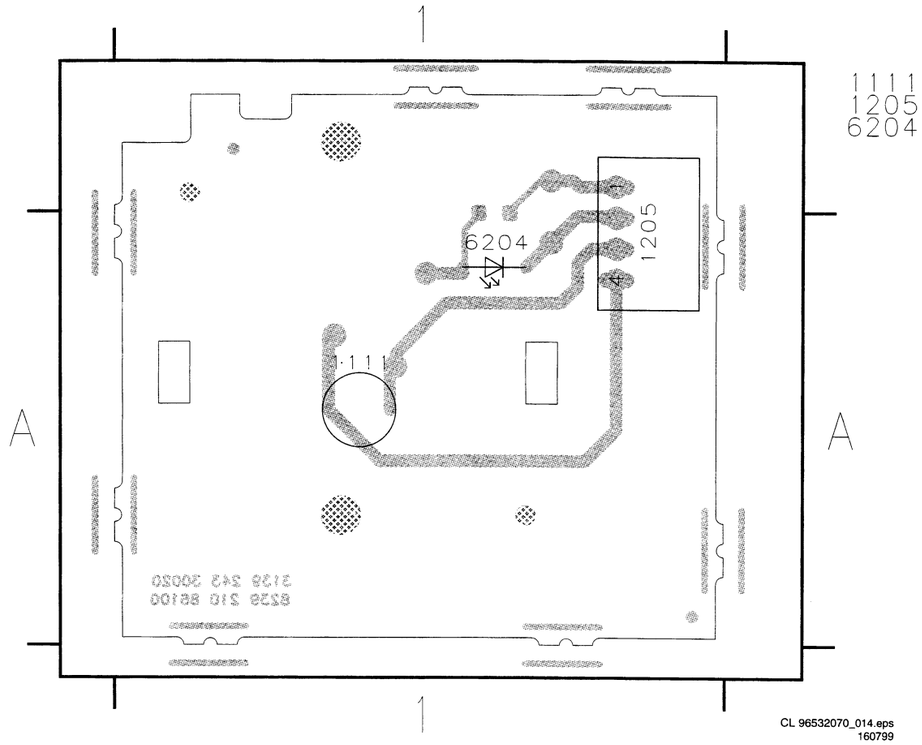
Personal notes:

Volume / Standby PWB

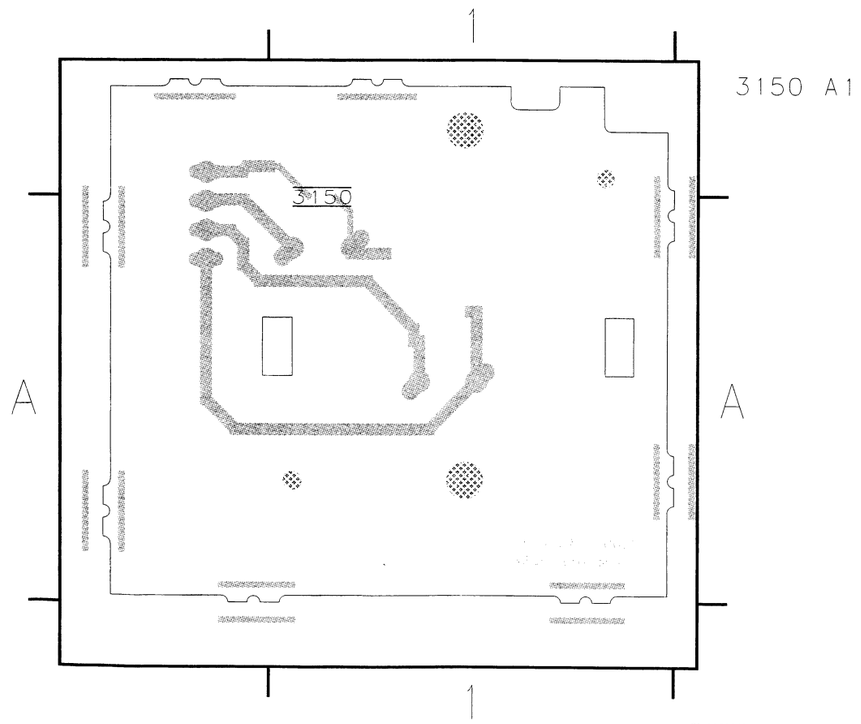


CL 96532070_018.eps
160799

1111 D1
1204 A2
1205 D2
3150 C1
3237 B1
3238-A A1
3239-A B1
3240 A1
6204 D1
T121 A2
T122 A2
T123 A2
T124 A2
T125 B2
T134 C1
T135 D1
T136 D1
T137 D2
T138 D2



CL 96532070_014.eps
160799



CL 96532070_015.eps
160799

Display

A1 : FRONT DISPLAY PCB

For models with P50 only

For DVD732 only

OPTION

For DVD 751 only

8-Bit h.break. v. out w. latch P8

8-Bit high breakdown voltage output part ewith latch P7

8-Bit high breakdown v. output port with latch P6

VFT driver circuit (automatic display)

8-Bit h. breakd. v. out w. port w. latch P9

5-Bit h. breakd. v. out w. latch PD

4-Bit In/Output (tri-state) P5

8-Bit input/Output (tri-state) P4

8-Bit A/D Converter

8-Bit Input/Output (tri-state) P0

3-Bit In/Output with latch P2

3-B. I/O P3 sink o.drain

RAM ROM Program Counter CPU

7104 TMP87CH74

7110 TSOP1736

7112 MC79L24

6101 BZX284-C8V2

6102 BZX284-C10

6104 BAS216

6105 BAS216

6106 BAS216

7100 BC847B

7101 BC847B

7102 BC847B

7103 BC847B

7105 BC337-25

7106 BC327-25

7107 BC847B

7108 BC847B

7109 BC857B

1113 14-MT-26GNK

PRM13EPY

P50 interface to scart

SKQNAB NEXT

SKQNAB PREV

SKQNAB OPEN / CLOSE

SKQNAB PLAY

SKQNAB PAUSE

SKQNAB STOP

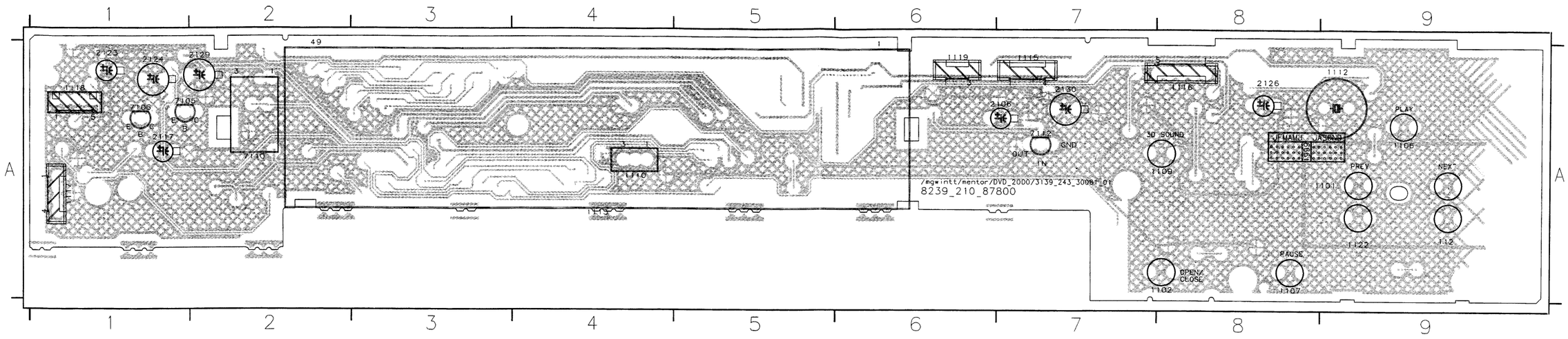
SKQNAB 3D SOUND

INFO : FIL2-FIL1=4.8Vac-RMS

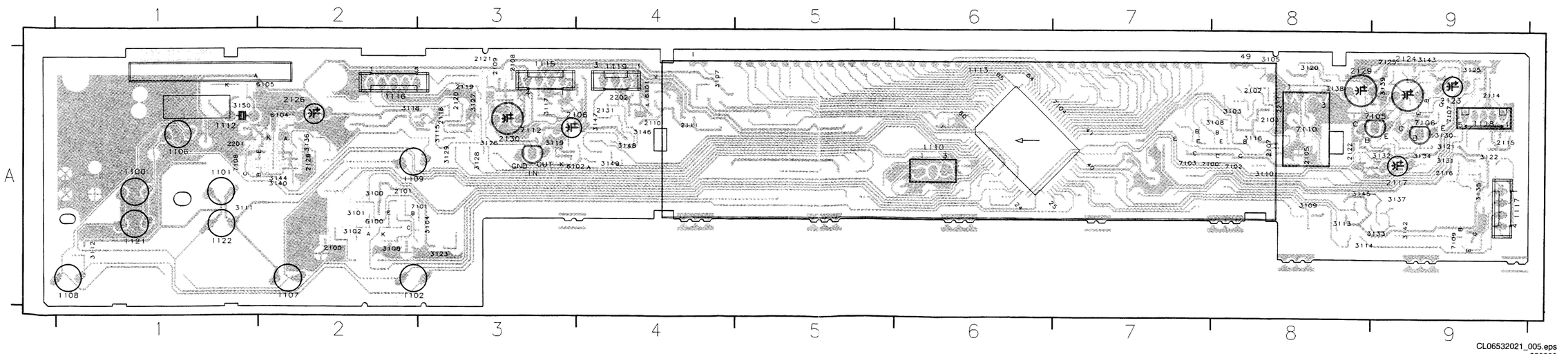
CL06532021_004.EPS 230200

Display PWB

1100 A91101 A91102 A81106 A91107 A81108 A91109 A81110 A41112 A91113 A41115 A71116 A81117 A11118 A11119 A61121 A91122 A92106 A72117 A12123 A12124 A12126 A82129 A22130 A77105 A77106 A77110 A27112 A7

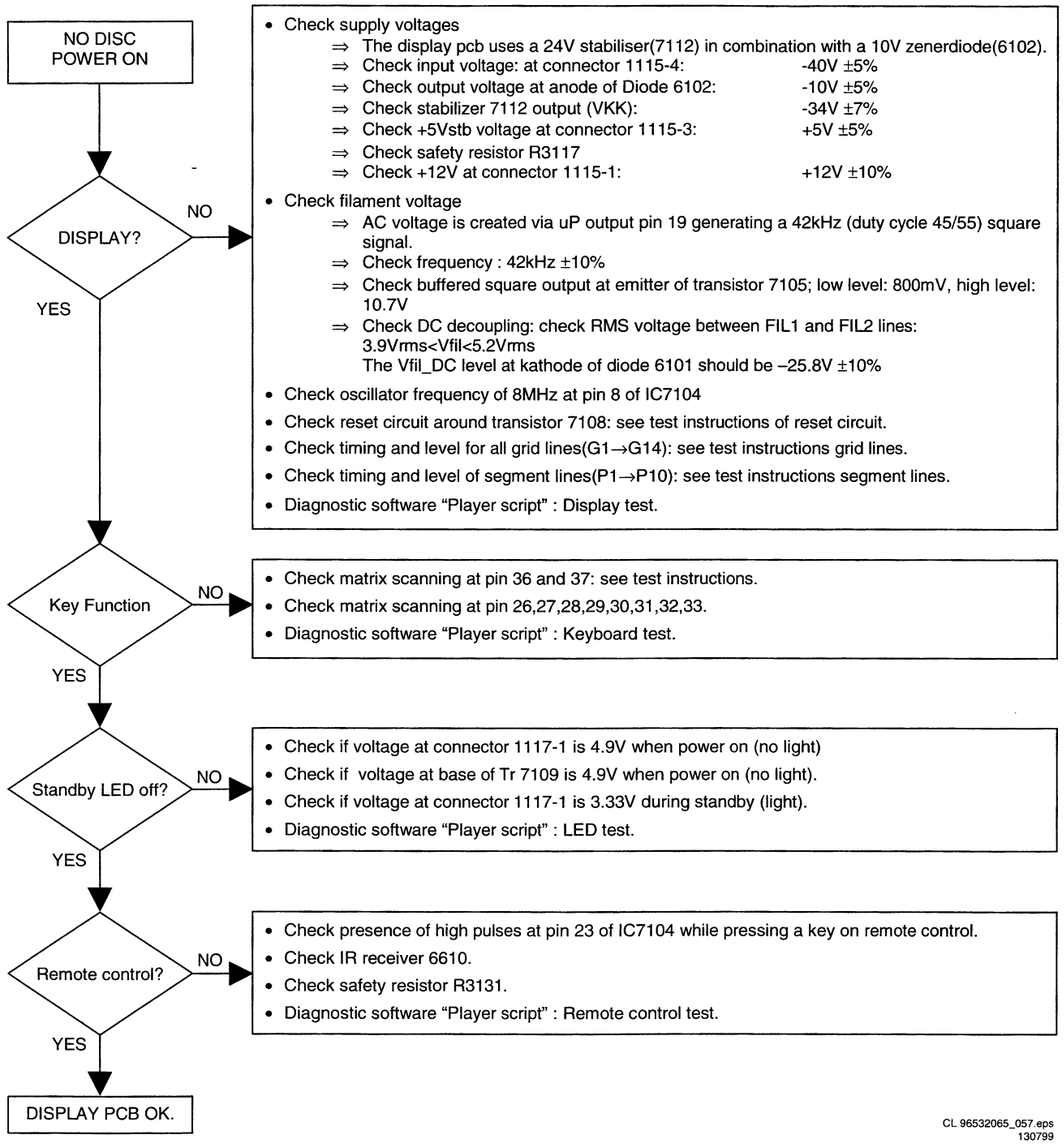


2100 A21103 A81108 A31111 A41116 A91120 A31125 A92201 A13100 A23103 A83106 A33109 A83112 A13115 A33118 A21121 A93125 A93128 A33131 A93134 A93137 A93140 A23144 A23147 A43150 A16102 A37100 A77103 A77108 A1
2101 A21105 A81109 A31114 A91118 A31121 A31128 A22202 A43101 A23104 A33107 A43110 A83113 A83116 A83119 A33122 A93126 A33129 A33132 A93135 A93138 A83142 A93145 A83148 A46100 A26104 A27101 A27104 A67109 A9
2102 A81107 A81110 A41115 A91119 A31122 A42211 A83102 A23105 A83108 A83111 A13114 A33117 A33120 A83123 A33127 A33130 A93133 A93136 A23139 A93143 A93146 A43149 A46101 A46105 A17102 A87107 A9



CL06532021_005.eps
230200

TROUBLESHOOTING DISPLAY BOARD


NO DISC POWER ON
DISPLAY?
NO
YES
• Check supply voltages
⇒ The display pcb uses a 24V stabiliser(7112) in combination with a 10V zenerdiode(6102).
⇒ Check input voltage: at connector 1115-4: -40V ±5%
⇒ Check output voltage at anode of Diode 6102: -10V ±5%
⇒ Check stabilizer 7112 output (VKK): -34V ±7%
⇒ Check +5Vstb voltage at connector 1115-3: +5V ±5%
⇒ Check safety resistor R3117
⇒ Check +12V at connector 1115-1: +12V ±10%
• Check filament voltage
⇒ AC voltage is created via uP output pin 19 generating a 42kHz (duty cycle 45/55) square signal.
⇒ Check frequency : 42kHz ±10%
⇒ Check buffered square output at emitter of transistor 7105; low level: 800mV, high level: 10.7V
⇒ Check DC decoupling: check RMS voltage between FIL1 and FIL2 lines: 3.9Vrms<Vfil<5.2Vrms
The Vfil_DC level at kathode of diode 6101 should be –25.8V ±10%
• Check oscillator frequency of 8MHz at pin 8 of IC7104
• Check reset circuit around transistor 7108: see test instructions of reset circuit.
• Check timing and level for all grid lines(G1→G14): see test instructions grid lines.
• Check timing and level of segment lines(P1→P10): see test instructions segment lines.
• Diagnostic software "Player script" : Display test.
Key Function
NO
YES
• Check matrix scanning at pin 36 and 37: see test instructions.
• Check matrix scanning at pin 26,27,28,29,30,31,32,33.
• Diagnostic software "Player script" : Keyboard test.
Standby LED off?
NO
YES
• Check if voltage at connector 1117-1 is 4.9V when power on (no light)
• Check if voltage at base of Tr 7109 is 4.9V when power on (no light).
• Check if voltage at connector 1117-1 is 3.33V during standby (light).
• Diagnostic software "Player script" : LED test.
Remote control?
NO
YES
• Check presence of high pulses at pin 23 of IC7104 while pressing a key on remote control.
• Check IR receiver 6610.
• Check safety resistor R3131.
• Diagnostic software "Player script" : Remote control test.
DISPLAY PCB OK.

CL 96532065_057.eps
130799

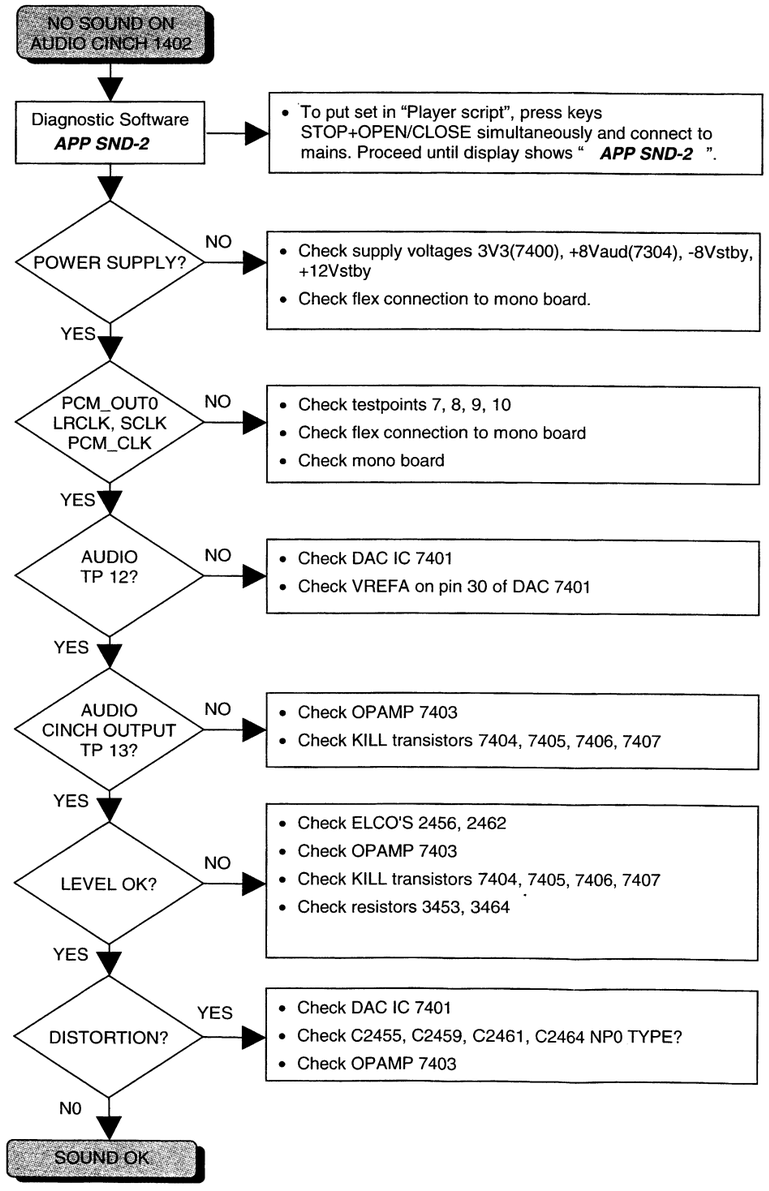
Figure 6-1

DVD 711 /001

TROUBLESHOOTING A/V BOARD

Testing of A/V board can be done using diagnostic software "Player script".
Mono board is used to generate a sinus with the soundtest SND-2 or a VIDEO signal with the picture test PIC-1.
See description in chapter "Diagnostic Software : Script Interfaces"

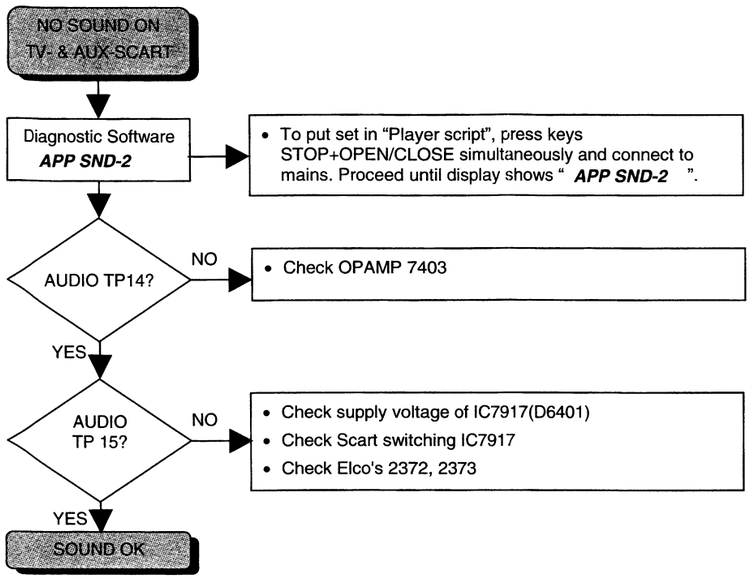
AUDIO PART

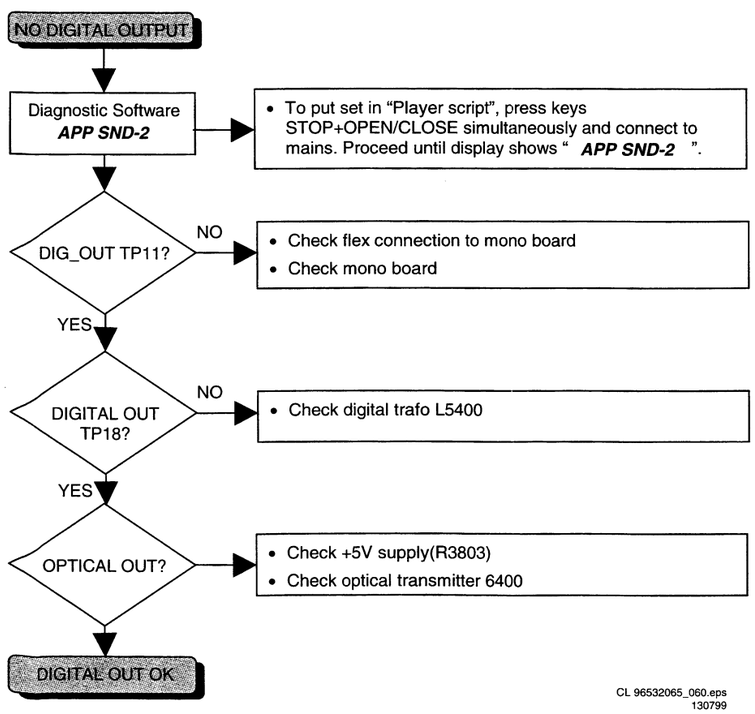

NO SOUND ON AUDIO CINCH 1402
Diagnostic Software APP SND-2
• To put set in "Player script", press keys STOP+OPEN/CLOSE simultaneously and connect to mains. Proceed until display shows " APP SND-2 ".
POWER SUPPLY?
NO
• Check supply voltages 3V3(7400), +8Vaud(7304), -8Vstby, +12Vstby
• Check flex connection to mono board.
YES
PCM_OUT0 LRCLK, SCLK PCM_CLK
NO
• Check testpoints 7, 8, 9, 10
• Check flex connection to mono board
• Check mono board
YES
AUDIO TP 12?
NO
• Check DAC IC 7401
• Check VREFA on pin 30 of DAC 7401
YES
AUDIO CINCH OUTPUT TP 13?
NO
• Check OPAMP 7403
• Check KILL transistors 7404, 7405, 7406, 7407
YES
LEVEL OK?
NO
• Check ELCO'S 2456, 2462
• Check OPAMP 7403
• Check KILL transistors 7404, 7405, 7406, 7407
• Check resistors 3453, 3464
YES
DISTORTION?
YES
• Check DAC IC 7401
• Check C2455, C2459, C2461, C2464 NP0 TYPE?
• Check OPAMP 7403
N0
SOUND OK

CL 96532065_059.eps
130799

Figure 6-2

DVD 711 /001

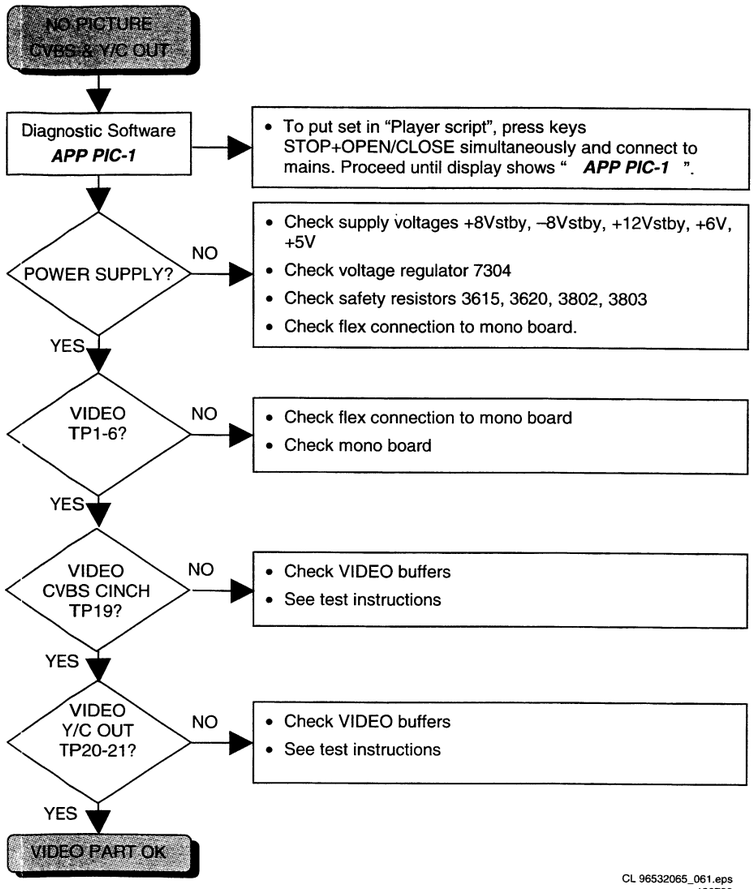

NO SOUND ON TV- & AUX SCART
Diagnostic Software APP SND-2
• To put set in "Player script", press keys STOP+OPEN/CLOSE simultaneously and connect to mains. Proceed until display shows " APP SND-2 ".
AUDIO TP14?
NO
• Check OPAMP 7403
YES
AUDIO TP 15?
NO
• Check supply voltage of IC7917(D6401)
• Check Scart switching IC7917
• Check Elco's 2372, 2373
YES
SOUND OK


NO DIGITAL OUTPUT
Diagnostic Software APP SND-2
• To put set in "Player script", press keys STOP+OPEN/CLOSE simultaneously and connect to mains. Proceed until display shows " APP SND-2 ".
DIG_OUT TP11?
NO
• Check flex connection to mono board
• Check mono board
YES
DIGITAL OUT TP18?
NO
• Check digital trafo L5400
YES
OPTICAL OUT?
• Check +5V supply(R3803)
• Check optical transmitter 6400
DIGITAL OUT OK

CL 96532065_060.eps
130799

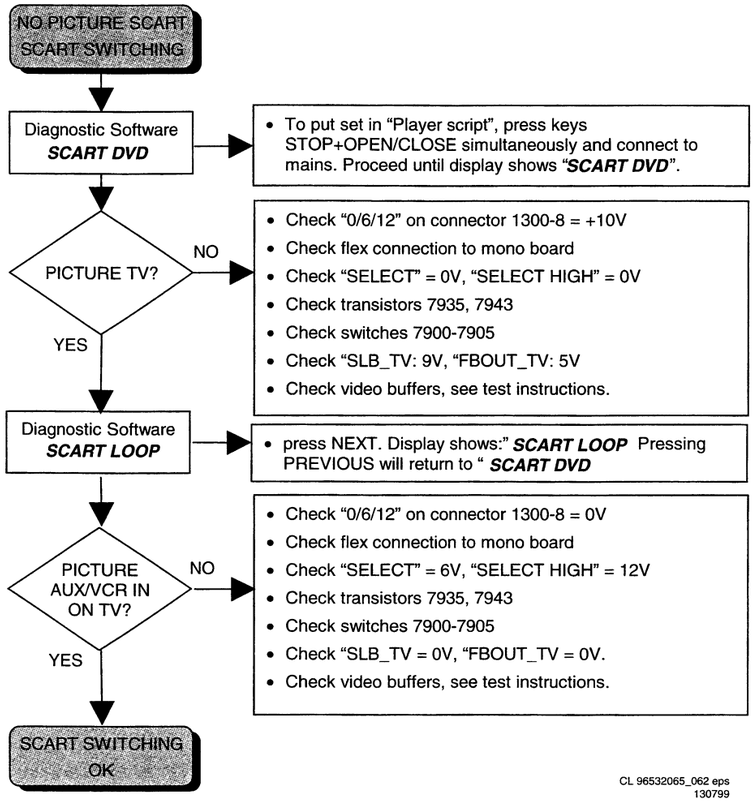
DVD 711 /001

VIDEO PART

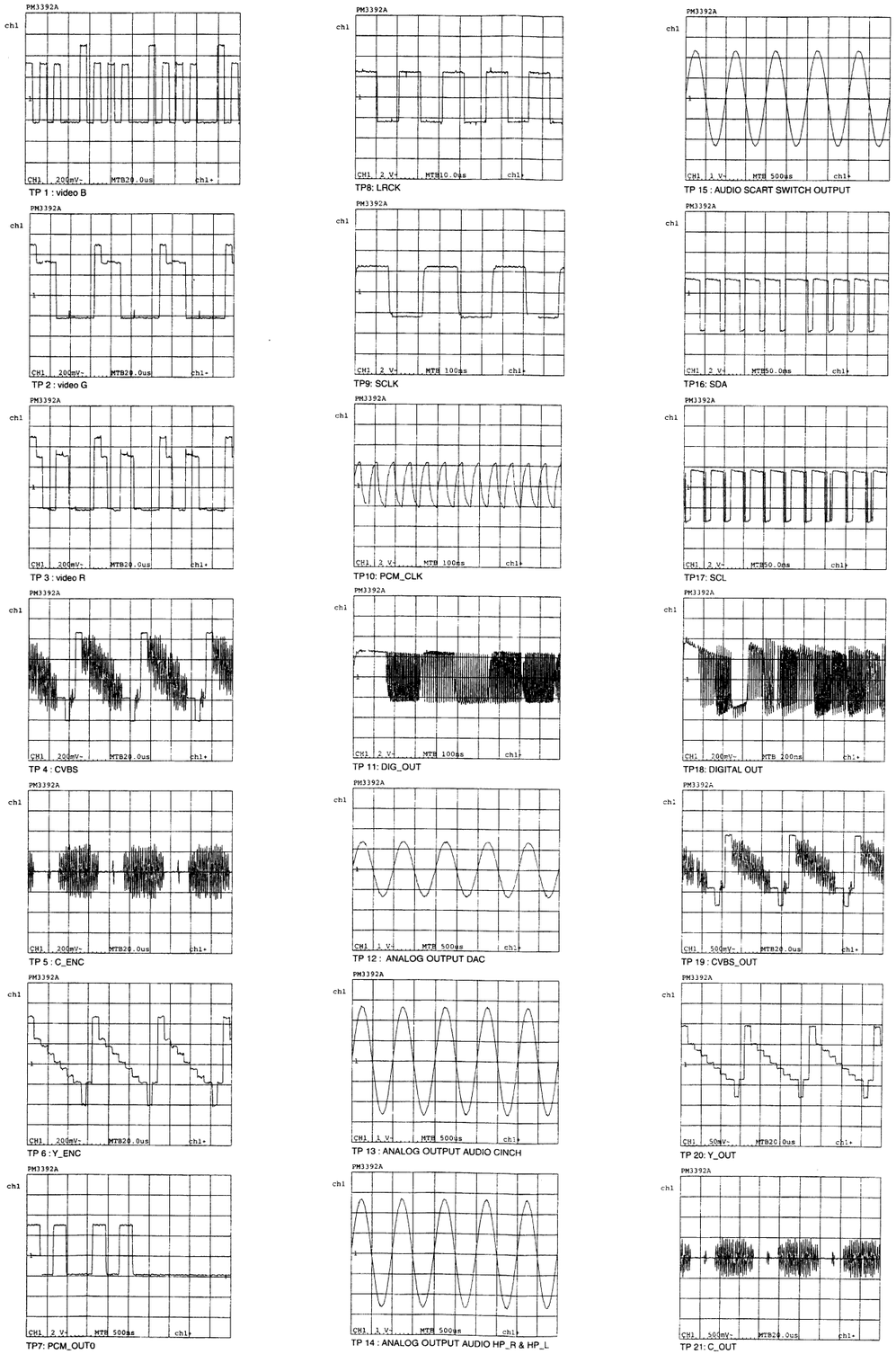

NO PICTURE CVBS & Y/C OUT
Diagnostic Software APP PIC-1
• To put set in "Player script", press keys STOP+OPEN/CLOSE simultaneously and connect to mains. Proceed until display shows " APP PIC-1 ".
POWER SUPPLY?
NO
• Check supply voltages +8Vstby, –8Vstby, +12Vstby, +6V, +5V
• Check voltage regulator 7304
• Check safety resistors 3615, 3620, 3802, 3803
• Check flex connection to mono board.
YES
VIDEO TP1-6?
NO
• Check flex connection to mono board
• Check mono board
YES
VIDEO CVBS CINCH TP19?
NO
• Check VIDEO buffers
• See test instructions
YES
VIDEO Y/C OUT TP20-21?
NO
• Check VIDEO buffers
• See test instructions
YES
VIDEO PART OK

CL 96532065_061.eps
130799

DVD 711 /001


NO PICTURE SCART
SCART SWITCHING
Diagnostic Software
SCART DVD
• To put set in "Player script", press keys STOP+OPEN/CLOSE simultaneously and connect to mains. Proceed until display shows "SCART DVD".
PICTURE TV?
NO
YES
• Check "0/6/12" on connector 1300-8 = +10V
• Check flex connection to mono board
• Check "SELECT" = 0V, "SELECT HIGH" = 0V
• Check transistors 7935, 7943
• Check switches 7900-7905
• Check "SLB_TV: 9V, "FBOUT_TV: 5V
• Check video buffers, see test instructions.
Diagnostic Software
SCART LOOP
• press NEXT. Display shows:" SCART LOOP Pressing PREVIOUS will return to " SCART DVD
PICTURE AUX/VCR IN ON TV?
NO
YES
• Check "0/6/12" on connector 1300-8 = 0V
• Check flex connection to mono board
• Check "SELECT" = 6V, "SELECT HIGH" = 12V
• Check transistors 7935, 7943
• Check switches 7900-7905
• Check "SLB_TV = 0V, "FBOUT_TV = 0V.
• Check video buffers, see test instructions.
SCART SWITCHING OK

CL 96532065_062 eps
130799



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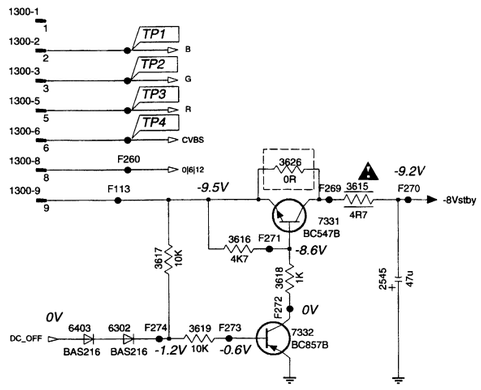
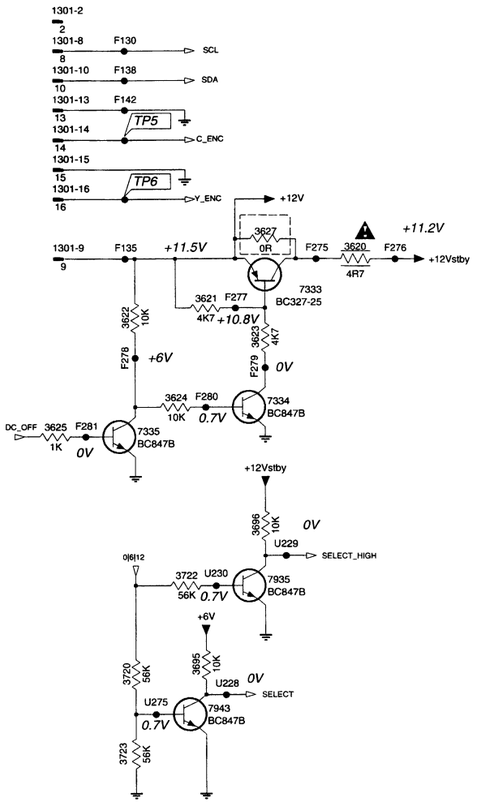
130799

DVD 711 /001

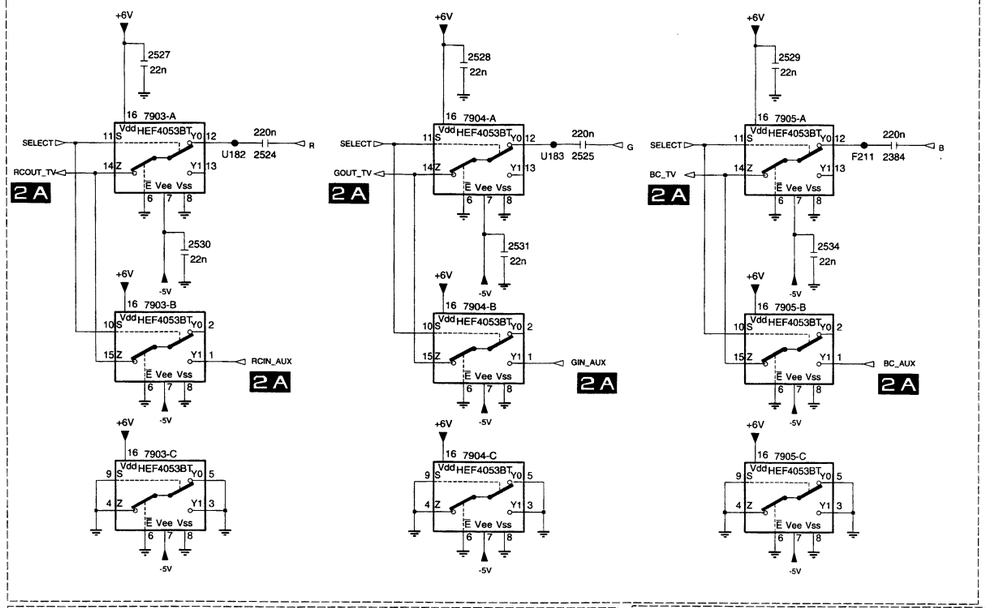
Supply and video switching 711 /001

1 A SUPPLY & VIDEO SWITCHING

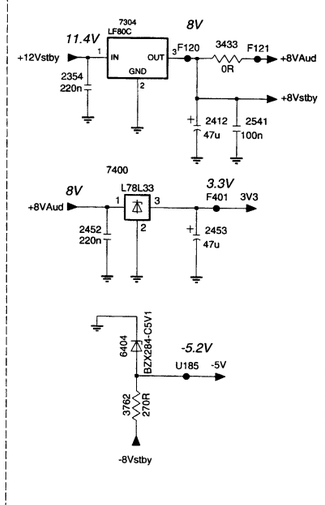




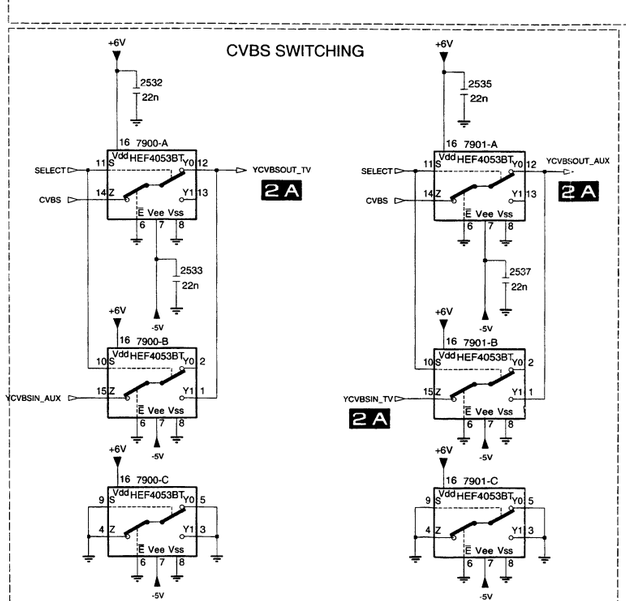
RGB switching



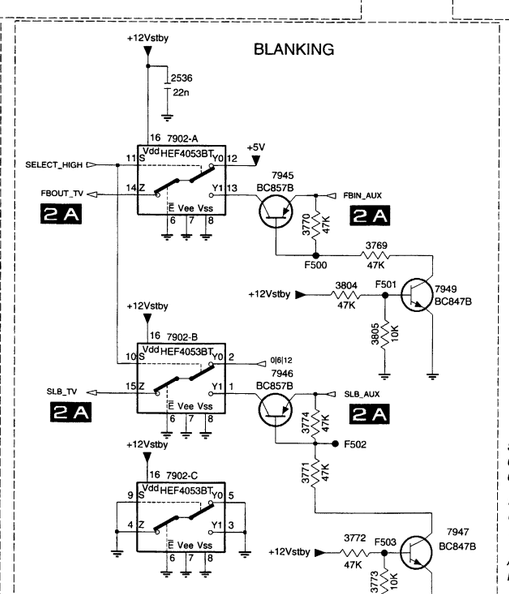
supply



CVBS SWITCHING



BLANKING



SELECT:
0V DURING PLAYER SCRIPT: "SCART DVD"
6V DURING PLAYER SCRIPT: "SCART LOOP"

SELECT HIGH:
0V DURING PLAYER SCRIPT: "SCART DVD"
12V DURING PLAYER SCRIPT: "SCART LOOP"

ALL DC VOLTAGES MEASURED IN STOP MODE.

PB A/V MUX
3104 123 4248
130-1

CL 96532065_051.eps
120799

1300-1 A1
1300-2 A1
1300-3 A1
1300-5 A1
1300-6 B1
1300-8 B1
1300-9 B1
1301-10 D1
1301-13 D1
1301-14 D1
1301-15 E1
1301-16 E1
1301-2 D1
1301-8 D1
1301-9 E1
2354 B13
2384 B11
2412 B14
2452 C13
2453 C14
2524 B6
2525 B9
2527 A6
2528 A8
2529 A10
2530 C6
2531 C8
2532 F6
2533 G6
2534 C10
2535 F8
2536 F10
2537 G8
2541 B14
2545 C4
3433 B14
3615 B3
3616 B3
3617 C2
3618 C3
3619 C2
3620 E3
3621 F2
3622 F2
3623 F3
3624 F2
3625 G1
3626 B3
3627 E3
3695 H2
3696 G3
3720 H2
3722 H2
3723 I2
3762 D13
3769 G12
3770 G11
3771 H11
3772 I11
3773 I12
3774 H11
3804 G11
3805 G12
6302 C2
6403 C1
6404 D13
7304 B13
7331 B3
7332 C3
7333 F3
7334 F3
7335 G2
7400 C13
7900-A F6
7900-B G6
7900-C H6
7901-A F8
7901-B G8
7901-C H8
7902-A F10
7902-B G10
7902-C H10
7903-A B6
7903-B C6
7903-C D6
7904-A B8
7904-B C8
7904-C D8
7905-A B10
7905-B C10
7905-C D10
7935 H3
7943 I2
7945 F11
7946 H11
7947 I12
7949 G12
F106 A2
F109 A2
F110 A2
F112 B2
F113 B2
F120 B13
F121 B14
F130 D2
F135 E2
F138 D2
F142 D2
F144 D2
F150 E2
F211 B11
F260 B2
F269 B3
F270 B4
F271 B3
F272 C3
F273 C2
F274 C2
F275 E3
F276 E4
F277 F2
F278 F2
F279 F3
F280 F2
F281 G1
F401 C14
F500 G11
F501 G12
F502 H11
F503 I12
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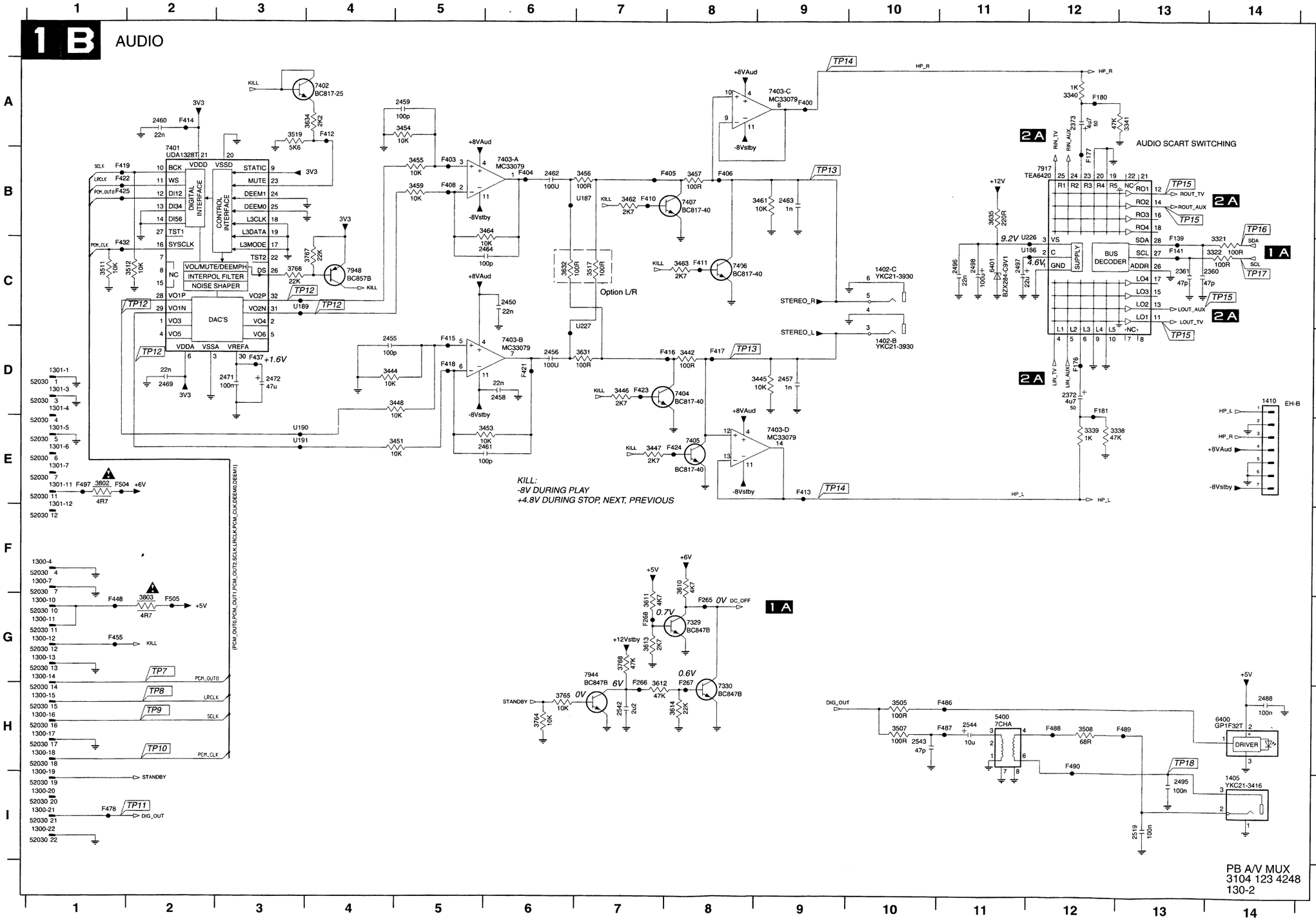
U183 B8
U185 D13
U228 H2
U229 G3
U230 H2
U275 I2

Audio A/V MUX DVD711 /001



1300-10 G1
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1300-12 G1
1300-13 G1
1300-14 G1
1300-15 H1
1300-16 H1
1300-17 H1
1300-18 H1
1300-19 I1
1300-20 I1
1300-21 I1
1300-22 I1
1300-4 F1
1300-7 F1
1301-1 D1
1301-11 E1
1301-12 F1
1301-3 D1
1301-4 D1
1301-5 E1
1301-6 E1
1301-7 E1
1402-B D10
1402-C C10
1405 I14
1410 D14
2360 C14
2361 C13
2372 D12
2373 A12
2450 C6
2455 D4
2456 D6
2457 D9
2458 D8
2459 A5
2460 A2
2461 E6
2462 B6
2463 B9
2464 C6
2469 D2
2471 D3
2472 D3
2488 H14
2495 I13
2496 C11
2497 C11
2498 C11
2519 I13
2542 H7
2543 H10
2544 H11
3321 C14
3322 C14
3338 E13
3339 E12
3340 A12
3341 A13
3442 D8
3444 D4
3445 D9
3446 D7
3447 E7
3448 D5
3451 E5
3453 E6
3454 A5
3455 B5
3456 B7
3457 B8
3459 B5
3461 B9
3462 B7
3463 C8
3464 B6
3505 H10
3507 H10
3508 H12
3511 C1
3512 C2
3517 C7
3519 A3
3610 F8
3611 G7
3612 H7
3613 G7
3614 H8
3631 D7
3632 C6
3634 A4
3635 B11
3764 H6
3765 H6
3766 C3
3767 C4
3768 G7
3802 E1
3803 G2
5400 H11
6400 H14
6401 C11
7329 G8
7330 H8
7401 B2
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7403-A B6
7403-B D6
7403-C A9
7403-D E9
7404 D8
7405 E8
7406 C8
7407 B8
7917 B12

7944 G7
7948 C4
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F141 C13
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F180 A12
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F267 H8
F268 G7
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F418 D5
F419 B1
F421 D6
F422 B1
F423 D7
F424 E8
F425 B1
F432 C1
F437 D3
F448 G1
F455 G1
F478 I1
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F487 H11
F488 H12
F489 H13
F490 H12
F497 E1
F504 E1
U186 C12
U187 B7
U189 C3
U190 E3
U191 E3
U226 C12
U227 D7

Scart panel DVD711 /001

2 A

SCART

1 A

ROUT_AUX
RIN_AUX
LOUT_AUX
LIN_AUX
BC_AUX
SLB_AUX
GIN_AUX
RCIN_AUX
FBIN_AUX
YCVBSOUT_AUX
YCVBSIN_AUX
(ROUT_AUX,RIN_AUX,LOUT_AUX,LIN_AUX,BC_AUX,SLB_AUX,GIN_AUX,RCIN_AUX,FBIN_AUX,YCVBSIN_AUX,YCVBSOUT_AUX)

AUX-SCART
1304-2

1 A

ROUT_TV
RIN_TV
LOUT_TV
LIN_TV
BC_TV
COUT_TV
RCOUT_TV
FBOUT_TV
YCVBSOUT_TV
YCVBSIN_TV
SLB_TV

TV-SCART
1304-1

1304-3
0350808190
MT1 MT2

PB A/V MUX
3104 123 4248
130-3

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1304-1 C13
1304-2 C6
1304-3 G13
2353 A10
2355 A10
2357 B10
2358 A12
2359 B10
2371 I11
2378 A3
2382 A3
2383 B3
2385 C3
2395 C5
2402 F5
2404 E5
2408 F5
2409 I5
2499 G5
2500 E12
2501 F11
2502 C11
2503 G11
2504 H11
2506 G2
2507 D9
2508 F8
2509 C8
2511 H8
2521 B12
2522 A5
2523 B5
3313 D12
3314 A11
3315 A11
3316 A12
3318 B11
3319 B11
3320 B12
3323 B11
3325 B11
3343 I11
3348 A4
3349 A5
3351 B4
3359 B5
3363 B4
3366 B5
3394 C4
3397 C5
3407 E5
3408 F4
3409 D4
3413 D4
3425 F5
3432 I4
3629 C5
3636 G2
3637 G2
3638 D9
3639 E9
3640 E8
3641 F8
3642 C8
3643 D8
3646 H8
3647 I8
3648 G2
3649 D9
3650 E8
3651 C8
3653 H9
3672 G5
3673 E11
3674 F11
3675 C11
3676 G10
3677 H11
3678 G3
3679 G3
3680 D10
3681 D10
3682 F9
3683 F10
3684 C9
3685 C10
3687 G9
3688 H9
3689 H10
3690 I11
3691 C4
3692 D4
3693 E4
3694 I4
3697 G4
3698 E11
3699 F10
3700 C10
3701 G10
3702 I10
3703 I10
3704 D3
3705 E3
3706 F3
3707 I3
3721 G10
3724 H9
3725 F9
3726 E9
3727 G3
3731 C9
3732 I9
3733 H9
3734 F8
3735 F9
3736 E9
3737 E10
3738 H2
3739 G3
3744 D8
3747 C9
3748 C8
3749 G2
3756 D9
3757 F8
3758 H8
3800 G9
3801 G10
7918 I10
7919 C3
7920 D3
7921 E3
7922 I3
7923 G4
7924 G2
7925 D11
7926 D9
7927 F10
7928 F9
7929 C10
7930 C8
7931 G9
7933 H10
7934 H9
7936 G3
7937 D10
7938 F10
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7941 H9
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F134 C13
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F140 C13
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F222 C6
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U149 F11
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U153 F8
U154 D13
U155 E13
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U158 C10
U159 C9
U160 C8
U161 G10
U162 G9
U163 G9
U167 H11
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U169 H9
U170 H9
U184 H8
U193 A2
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U195 B2
U196 C2
U197 C2
U198 D2
U199 D4
U200 C4
U201 E4
U202 E2
U203 F2
U204 E6
U205 G2
U206 I4
U207 I2
U208 I8
U209 I10
U210 H8
U211 H8
U212 G10
U213 F8
U214 F8
U215 D9
U216 D8
U217 C8
U218 C8
U219 B8
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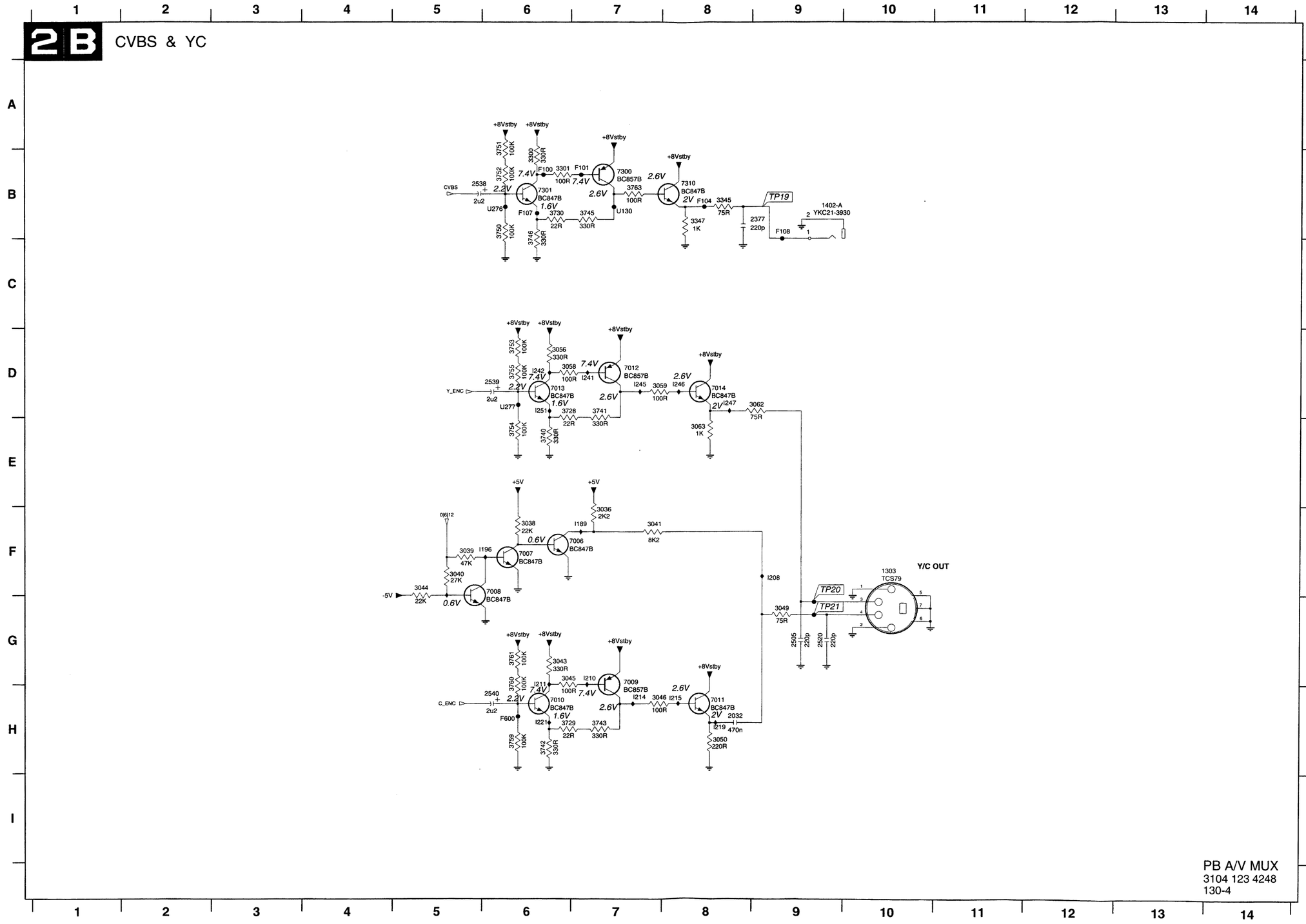
U225 D6
U278 G8
U279 G9

CVBS / YC panel DVD711 /001



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2377 B9
2505 G9
2520 G9
2538 B5
2539 D6
2540 H6
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3038 F6
3039 F5
3040 F5
3041 F7
3043 G6
3044 F5
3045 G6
3046 H7
3049 G9
3050 H8
3056 D6
3058 D6
3059 D7
3062 D9
3063 E8
3300 B6
3301 B6
3345 B8
3347 B8
3728 D6
3729 H6
3730 B6
3740 E6
3741 D7
3742 H6
3743 H7
3745 B7
3746 B6
3750 B6
3751 A6
3752 B6
3753 D6
3754 E6
3755 D6
3759 H6
3760 G6
3761 G6
3763 B7
3999 I1
7006 F6
7007 F6
7008 F6
7009 G7
7010 H6
7011 H8
7012 D7
7013 D6
7014 D8
7300 B7
7301 B6
7310 B8
F100 B6
F101 B7
F104 B8
F107 B6
F108 B9
F600 H6
I189 F7
I191 F6
I196 F6
I200 G5
I208 F9
I210 G7
I211 G6
I214 H7
I215 H8
I219 H8
I221 H6
I241 D7
I242 D6
I245 D7
I246 D8
I247 D8
I251 D6
U130 B7
U192 G9
U224 G9
U276 B6
U277 D6

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A/V Mux panel DVD711 /001

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1301 A5	2359 A9	2412 A6	2496 A8	2525 B5	2536 B5	3038 B7	3338 A8	3413 B5	3511 A2	3620 A4	3692 A8	3722 B3	3765 A5	6403 A3	7331 A3	7900 B6	7922 A7
1303 B7	2360 A8	2452 A3	2497 A9	2527 B5	2537 B5	3039 B7	3339 A8	3425 B4	3512 A2	3621 A4	3693 A8	3723 B2	3766 A2	6404 A5	7332 A3	7901 B5	7935 B3
1304 B9	2361 A8	2453 A2	2498 A9	2528 B5	2538 B3	3040 B7	3340 A8	3432 A7	3519 A1	3623 A4	3694 B7	3729 B7	3767 A3	7006 B7	7333 A4	7902 B4	7943 B2
1402 B3	2372 A8	2456 A2	2506 A6	2529 B6	2539 A7	3041 B7	3341 A8	3433 A6	3610 A4	3625 A4	3695 B2	3742 B7	3772 B5	7007 B7	7334 A4	7903 B4	7944 A5
1405 B2	2373 A8	2460 A1	2507 A7	2530 A4	2540 A7	3043 B7	3348 A9	3442 B3	3612 A5	3626 A3	3696 B3	3743 B7	3773 B5	7008 B7	7335 A4	7904 B5	7948 A2
1410 A1	2378 A9	2462 A3	2508 A6	2531 A5	2541 B6	3044 B7	3351 A9	3446 B3	3613 A4	3627 A4	3704 A8	3759 B7	3802 A5	7009 B7	7400 A3	7905 B6	
2353 A9	2382 A9	2469 A2	2509 A8	2532 B6	2542 A5	3045 B7	3363 A9	3462 B3	3614 A5	3629 A8	3705 A8	3760 B7	5400 B1	7010 B7	7401 A1	7917 A9	
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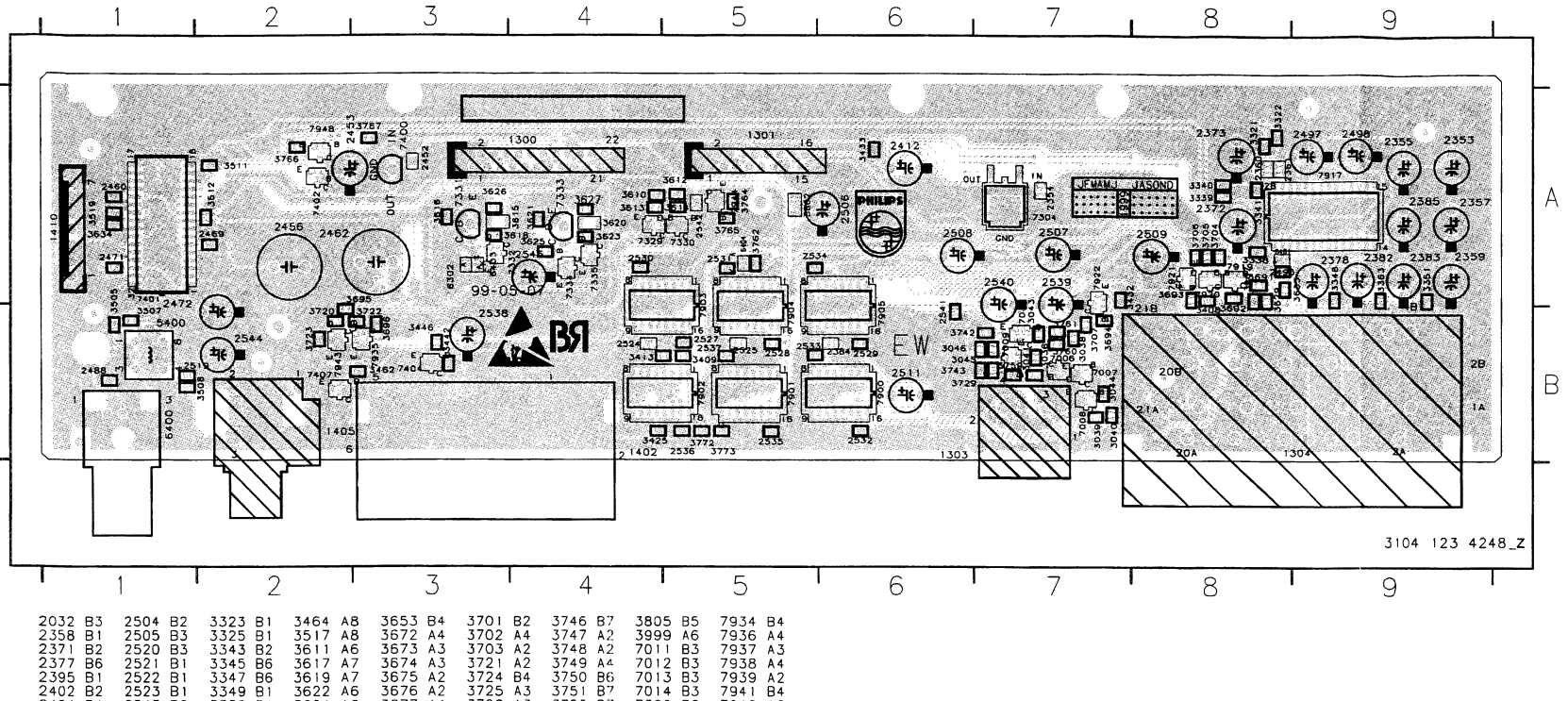
2355 A9	2384 B6	2472 B2	2519 B1	2534 A5	2545 A4	3321 A8	3408 A8	3507 B1	3616 A3	3635 A8	3707 B7	3762 A5	6400 B1	7329 A4	7404 B3	7920 A8	



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2377 B6	2521 B1	3345 B6	3617 A7	3674 A3	3721 A2	3749 A4	7012 B3	7938 A4	
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2402 B2	2523 B1	3349 B1	3622 A6	3676 A2	3725 A3	3751 B7	7014 B3	7941 B4	
2404 B1	2543 B9	3359 B1	3624 A6	3677 A4	3726 A3	3752 B7	7300 B6	7942 A2	
2408 B2	3049 B3	3366 B1	3631 A8	3678 A4	3727 A4	3753 B3	7301 B6	7945 B6	
2409 B2	3050 B4	3394 A1	3632 A8	3679 A4	3728 B3	3754 B3	7310 B6	7946 B5	
2450 A8	3056 B3	3397 B1	3636 A4	3680 A3	3730 B6	3755 B3	7403 A8	7947 B5	
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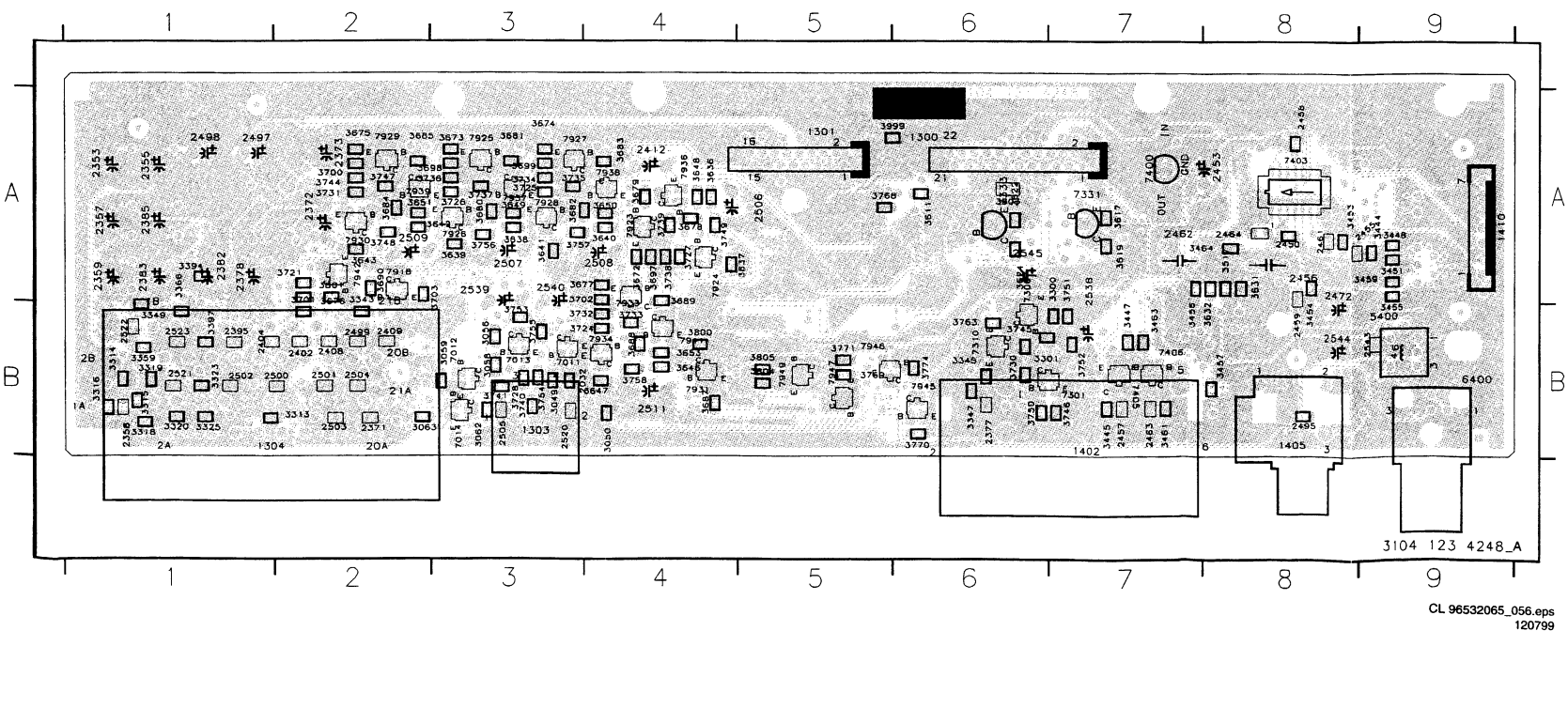
2459 A8	3063 B2	3448 A9	3640 A4	3684 A2	3734 A3	3763 B6	7923 A4		
2461 A8	3300 B7	3451 A9	3641 A3	3685 A2	3735 A3	3768 A5	7924 A4		
2463 B7	3301 B6	3453 A8	3642 A2	3687 B4	3736 A3	3769 B5	7925 A3		
2464 A8	3313 B1	3454 A8	3643 A2	3688 B4	3737 A3	3770 B6	7926 A3		
2495 B8	3314 B1	3455 A9	3646 B4	3689 A4	3738 A4	3771 B5	7927 A3		
2499 B2	3315 B1	3456 A7	3647 B4	3690 A2	3739 A4	3774 B6	7928 A3		
2500 B2	3316 B1	3457 B8	3648 A4	3697 A4	3740 B3	3800 B4	7929 A2		
2501 B2	3318 B1	3459 A9	3649 A3	3698 A3	3741 B3	3801 A2	7930 A2		
2502 B1	3319 B1	3461 B7	3650 A4	3699 A3	3744 A2	3803 A6	7931 B4		
2503 B2	3320 B1	3463 B7	3651 A2	3700 A2	3745 B6	3804 B5	7933 A4		



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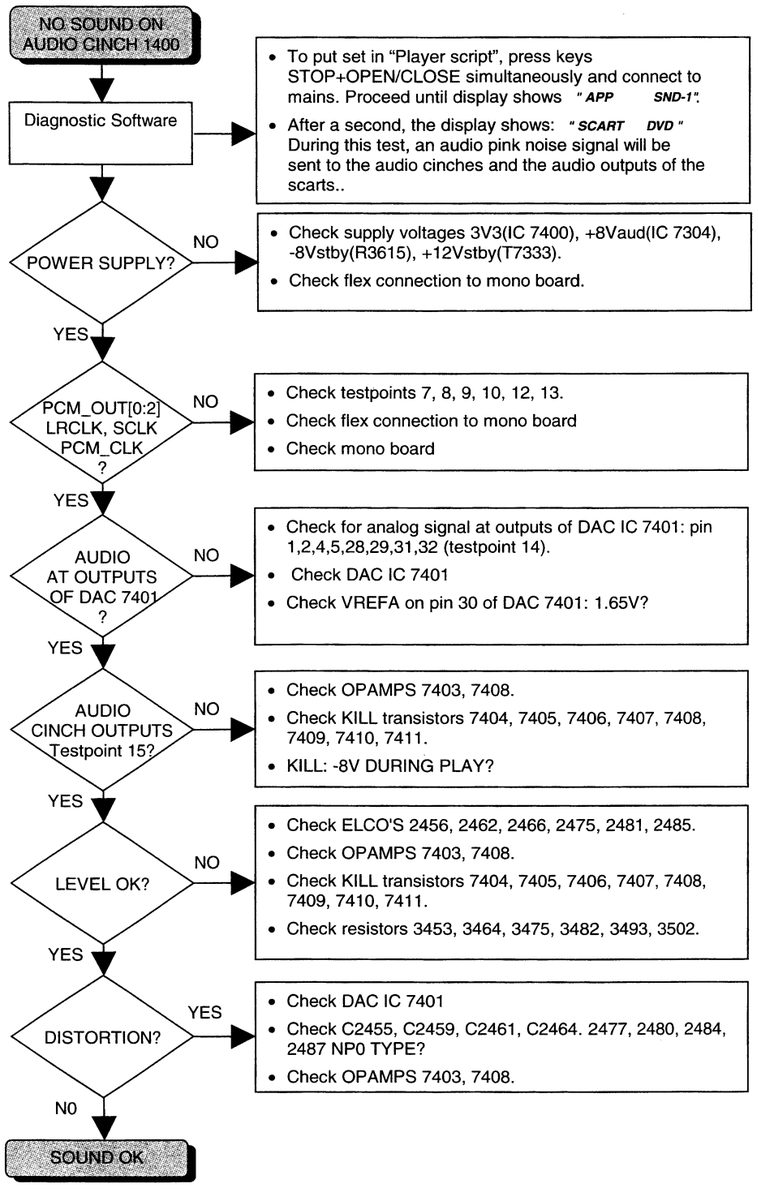
DVD751 /001

TROUBLESHOOTING A/V BOARD

Testing of A/V board can be done using diagnostic software “Player script”.
Mono board is used to generate a sound with the sound tests SND-1 and SND-2 or a VIDEO signal with the picture test PIC-1. Functional control of scart switching and RGB video processing is also possible. See description in chapter “Diagnostic Software: Script Interfaces”

AUDIO PART


NO SOUND ON AUDIO CINCH 1400
Diagnostic Software
• To put set in “Player script”, press keys STOP+OPEN/CLOSE simultaneously and connect to mains. Proceed until display shows " APP SND-1".
• After a second, the display shows: " SCART DVD " During this test, an audio pink noise signal will be sent to the audio cinches and the audio outputs of the scarts..
POWER SUPPLY?
NO
• Check supply voltages 3V3(IC 7400), +8Vaud(IC 7304), -8Vstby(R3615), +12Vstby(T7333).
• Check flex connection to mono board.
YES
PCM_OUT[0:2] LRCLK, SCLK PCM_CLK ?
NO
• Check testpoints 7, 8, 9, 10, 12, 13.
• Check flex connection to mono board
• Check mono board
YES
AUDIO AT OUTPUTS OF DAC 7401 ?
NO
• Check for analog signal at outputs of DAC IC 7401: pin 1,2,4,5,28,29,31,32 (testpoint 14).
• Check DAC IC 7401
• Check VREFA on pin 30 of DAC 7401: 1.65V?
YES
AUDIO CINCH OUTPUTS Testpoint 15?
NO
• Check OPAMPS 7403, 7408.
• Check KILL transistors 7404, 7405, 7406, 7407, 7408, 7409, 7410, 7411.
• KILL: -8V DURING PLAY?
YES
LEVEL OK?
NO
• Check ELCO'S 2456, 2462, 2466, 2475, 2481, 2485.
• Check OPAMPS 7403, 7408.
• Check KILL transistors 7404, 7405, 7406, 7407, 7408, 7409, 7410, 7411.
• Check resistors 3453, 3464, 3475, 3482, 3493, 3502.
YES
DISTORTION?
YES
• Check DAC IC 7401
• Check C2455, C2459, C2461, C2464. 2477, 2480, 2484, 2487 NP0 TYPE?
• Check OPAMPS 7403, 7408.
N0
SOUND OK

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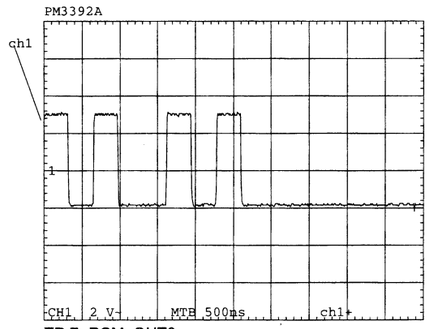
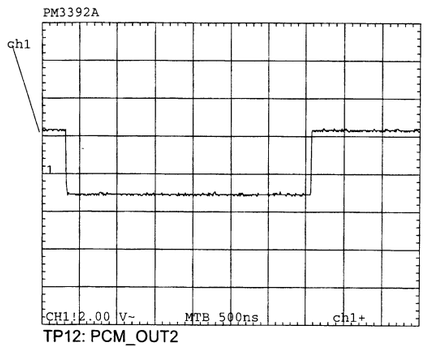
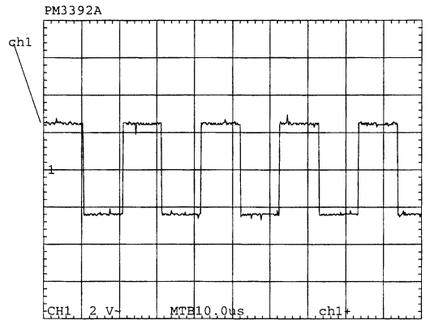
Audio-1 DVD751 /001



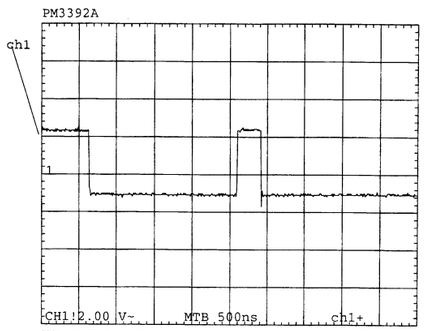
TP 7: PCM_OUT0



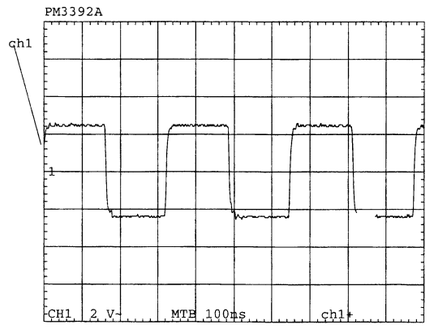
TP12: PCM_OUT2



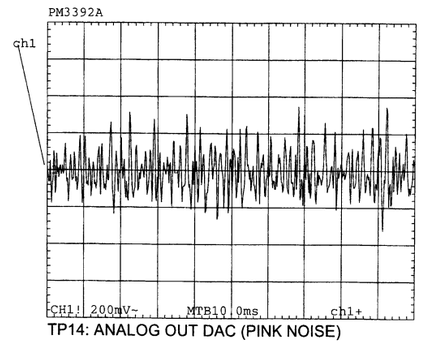
TP8: LRCLK



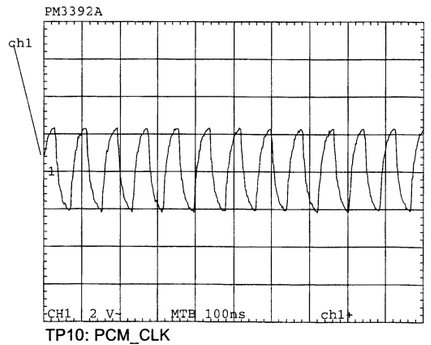
TP13: PCM_OUT1



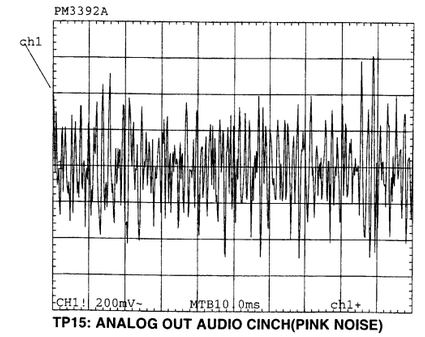
TP9: SCLK



TP14: ANALOG OUT DAC (PINK NOISE)



TP10: PCM_CLK



TP15: ANALOG OUT AUDIO CINCH(PINK NOISE)

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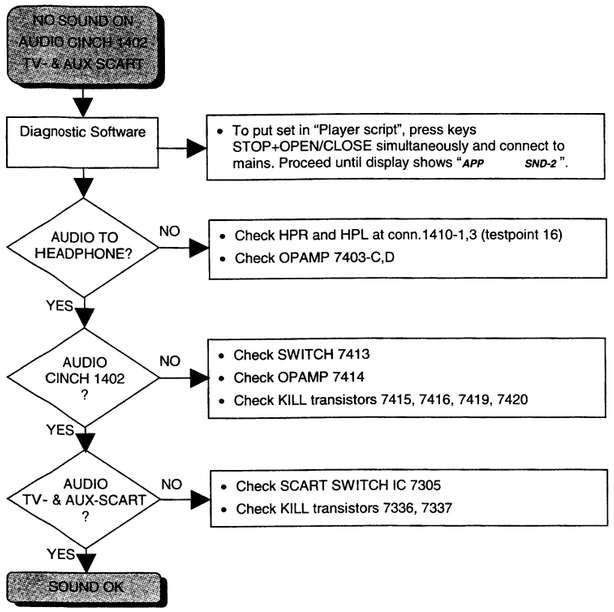
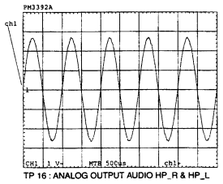
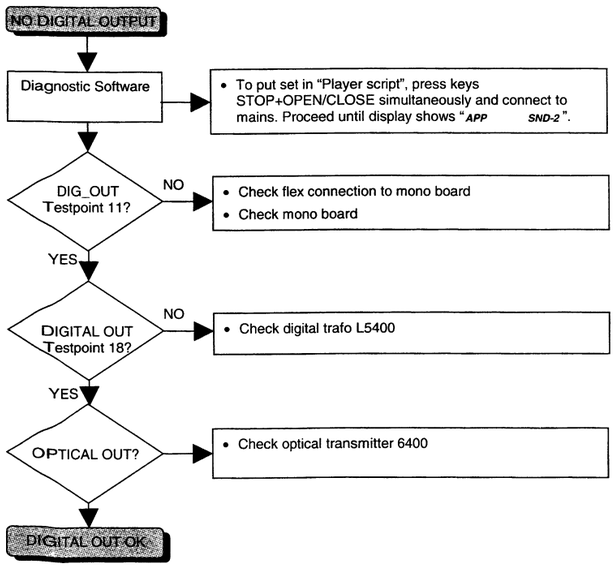
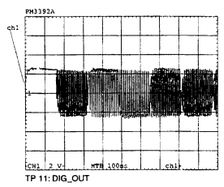
DVD751 /001


NO SOUND ON AUDIO CINCH 1402 TV- & AUX SCART
Diagnostic Software
• To put set in "Player script", press keys STOP+OPEN/CLOSE simultaneously and connect to mains. Proceed until display shows "APP SND-2".
AUDIO TO HEADPHONE?
NO
• Check HPR and HPL at conn.1410-1,3 (testpoint 16)
• Check OPAMP 7403-C,D
YES
AUDIO CINCH 1402 ?
NO
• Check SWITCH 7413
• Check OPAMP 7414
• Check KILL transistors 7415, 7416, 7419, 7420
YES
AUDIO TV- & AUX-SCART ?
NO
• Check SCART SWITCH IC 7305
• Check KILL transistors 7336, 7337
YES
SOUND OK

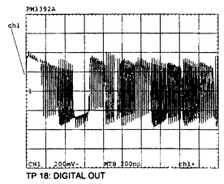


TP 16 : ANALOG OUTPUT AUDIO HP_R & HP_L


NO DIGITAL OUTPUT
Diagnostic Software
• To put set in "Player script", press keys STOP+OPEN/CLOSE simultaneously and connect to mains. Proceed until display shows "APP SND-2".
DIG_OUT Testpoint 11?
NO
• Check flex connection to mono board
• Check mono board
YES
DIGITAL OUT Testpoint 18?
NO
• Check digital trafo L5400
YES
OPTICAL OUT?
• Check optical transmitter 6400
DIGITAL OUT OK



TP 11: DIG_OUT



TP 18: DIGITAL OUT

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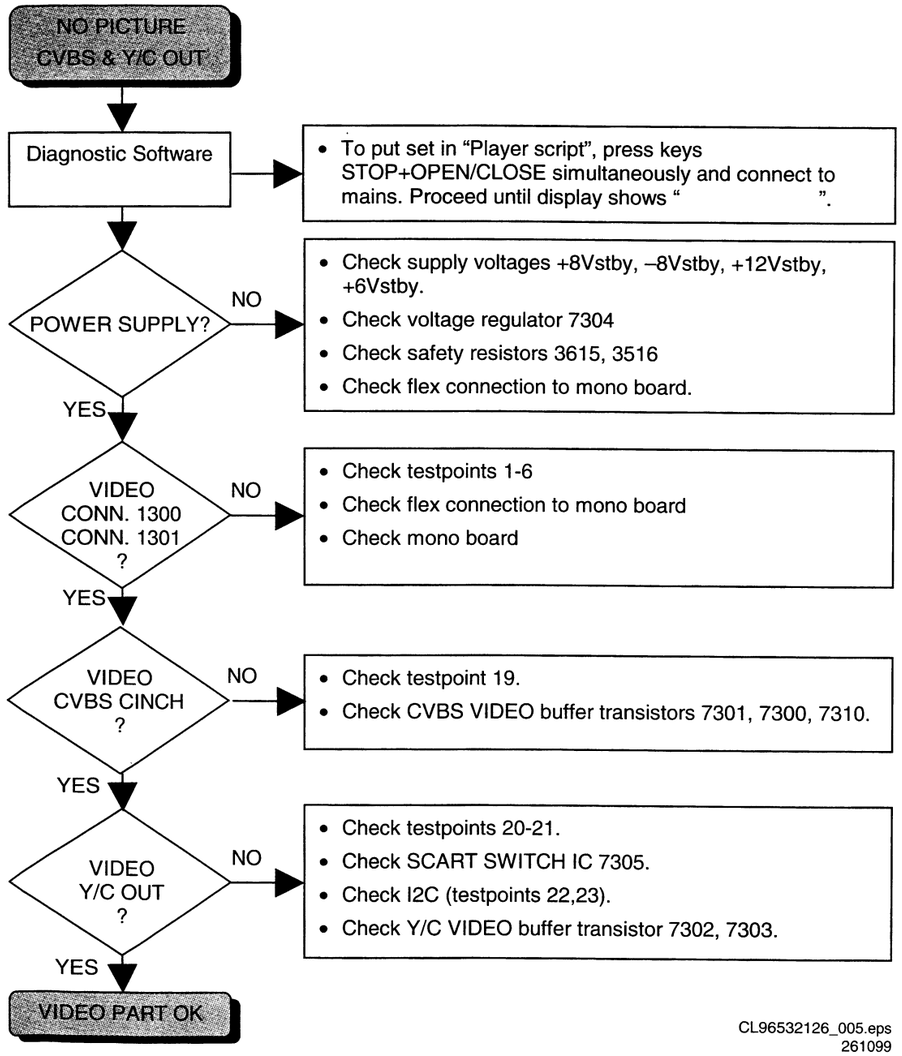
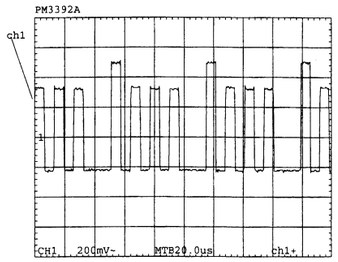
DVD751 /001

VIDEO PART

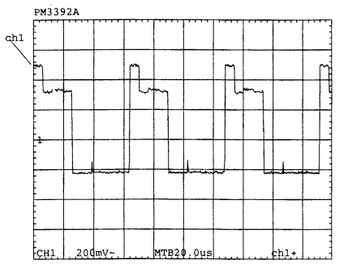

NO PICTURE CVBS & Y/C OUT
Diagnostic Software
• To put set in "Player script", press keys STOP+OPEN/CLOSE simultaneously and connect to mains. Proceed until display shows " ".
POWER SUPPLY?
NO
• Check supply voltages +8Vstby, –8Vstby, +12Vstby, +6Vstby.
• Check voltage regulator 7304
• Check safety resistors 3615, 3516
• Check flex connection to mono board.
YES
VIDEO CONN. 1300 CONN. 1301 ?
NO
• Check testpoints 1-6
• Check flex connection to mono board
• Check mono board
YES
VIDEO CVBS CINCH ?
NO
• Check testpoint 19.
• Check CVBS VIDEO buffer transistors 7301, 7300, 7310.
YES
VIDEO Y/C OUT ?
NO
• Check testpoints 20-21.
• Check SCART SWITCH IC 7305.
• Check I2C (testpoints 22,23).
• Check Y/C VIDEO buffer transistor 7302, 7303.
YES
VIDEO PART OK

CL96532126_005.eps
261099

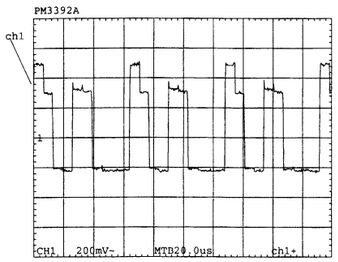
Video-1 DVD751 /001



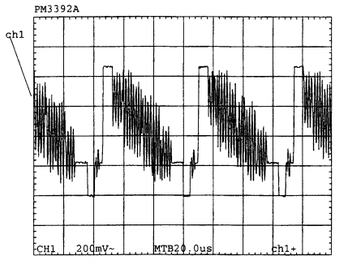
TP 1 : video B



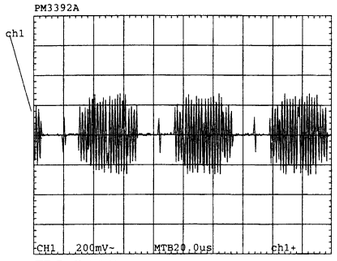
TP 2 : video G



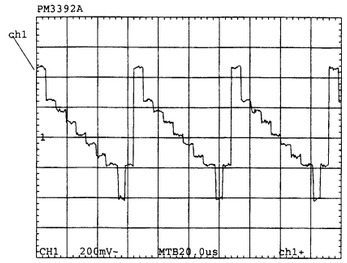
TP 3 : video R



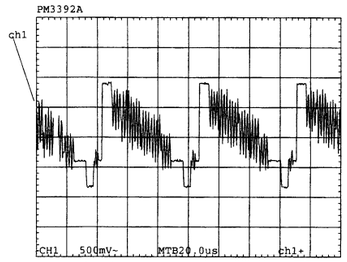
TP 4 : CVBS



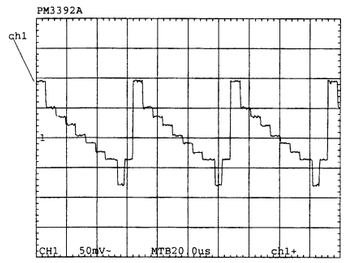
TP 5 : C_ENC



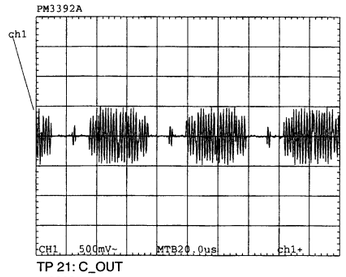
TP 6 : Y_ENC



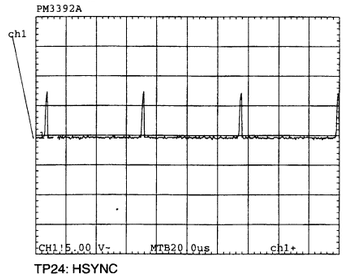
TP 19 : CVBS_OUT



TP20: Y_OUT



TP 21: C_OUT



TP24: HSYNC

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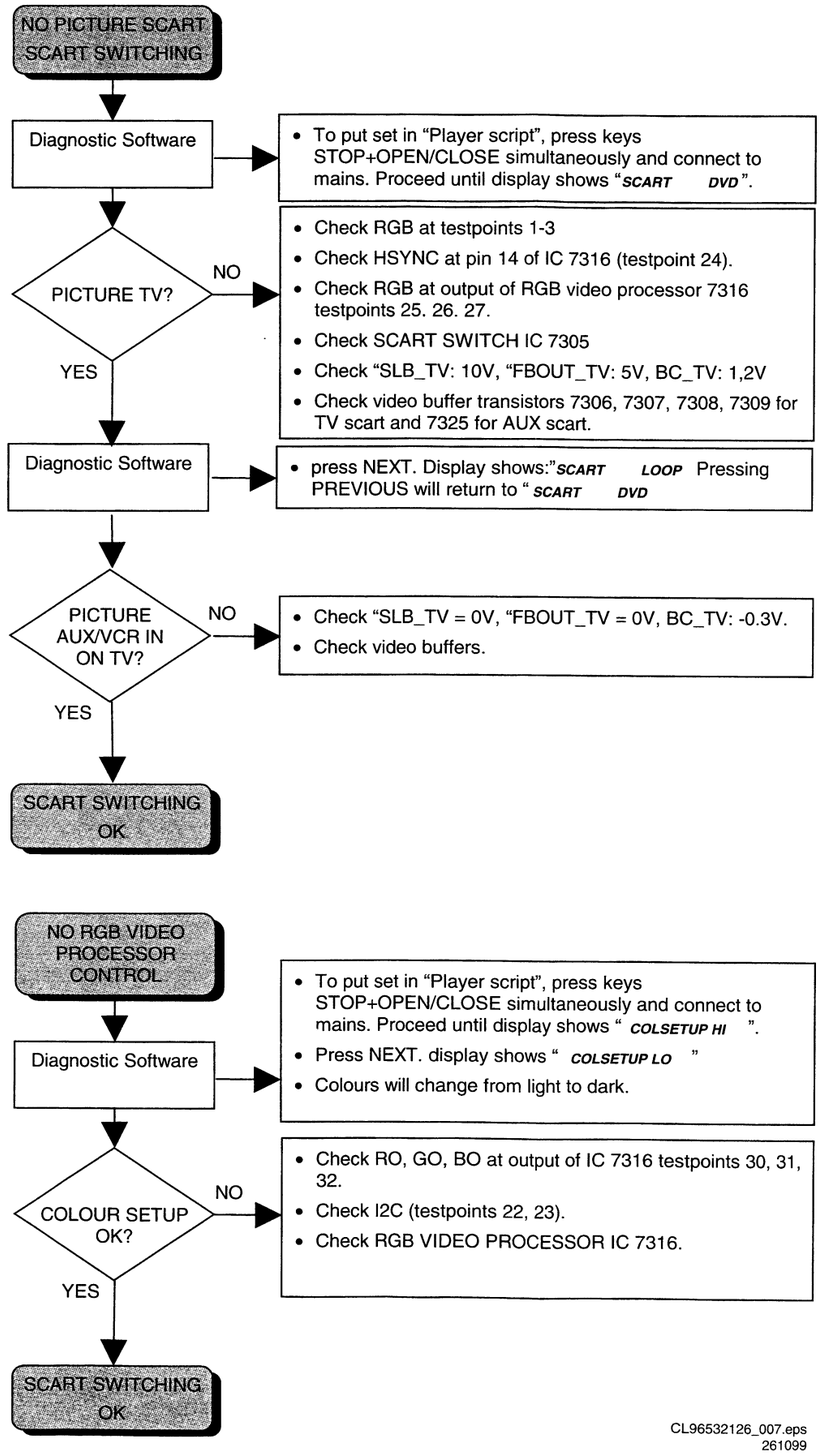
DVD751 /001


NO PICTURE SCART
SCART SWITCHING
Diagnostic Software
• To put set in "Player script", press keys STOP+OPEN/CLOSE simultaneously and connect to mains. Proceed until display shows "SCART DVD".
PICTURE TV?
NO
• Check RGB at testpoints 1-3
• Check HSYNC at pin 14 of IC 7316 (testpoint 24).
• Check RGB at output of RGB video processor 7316 testpoints 25. 26. 27.
• Check SCART SWITCH IC 7305
• Check "SLB_TV: 10V, "FBOUT_TV: 5V, BC_TV: 1,2V
• Check video buffer transistors 7306, 7307, 7308, 7309 for TV scart and 7325 for AUX scart.
YES
Diagnostic Software
• press NEXT. Display shows:"SCART LOOP Pressing PREVIOUS will return to " SCART DVD
PICTURE AUX/VCR IN ON TV?
NO
• Check "SLB_TV = 0V, "FBOUT_TV = 0V, BC_TV: -0.3V.
• Check video buffers.
YES
SCART SWITCHING OK
NO RGB VIDEO PROCESSOR CONTROL
Diagnostic Software
• To put set in "Player script", press keys STOP+OPEN/CLOSE simultaneously and connect to mains. Proceed until display shows " COLSETUP HI ".
• Press NEXT. display shows " COLSETUP LO "
• Colours will change from light to dark.
COLOUR SETUP OK?
NO
• Check RO, GO, BO at output of IC 7316 testpoints 30, 31, 32.
• Check I2C (testpoints 22, 23).
• Check RGB VIDEO PROCESSOR IC 7316.
YES
SCART SWITCHING OK

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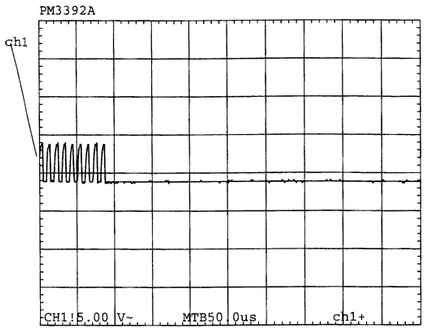
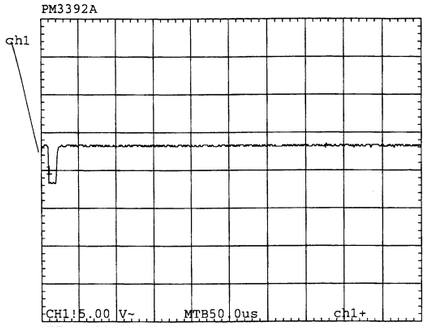
261099

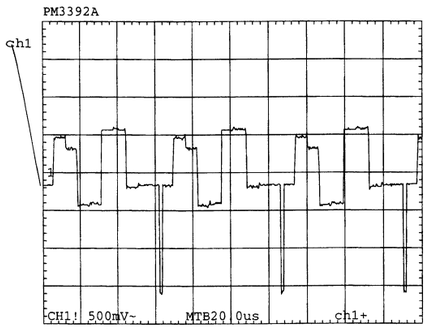
Video-2 DVD751 /001



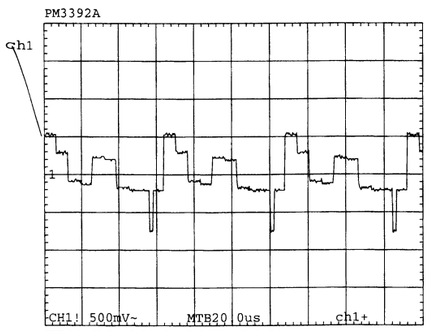
TP22: SCL(I2C)



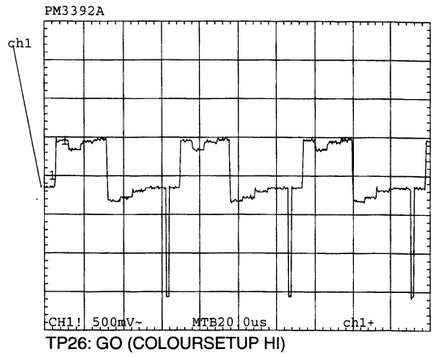
TP23: SDA(I2C)



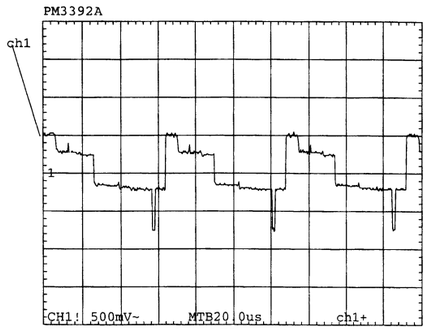
TP25: RO (COLOURSETUP HI)



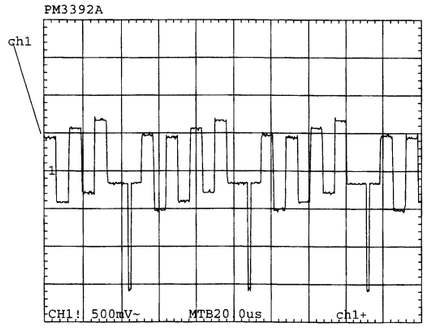
TP25: RO (COLOURSETUP LO)



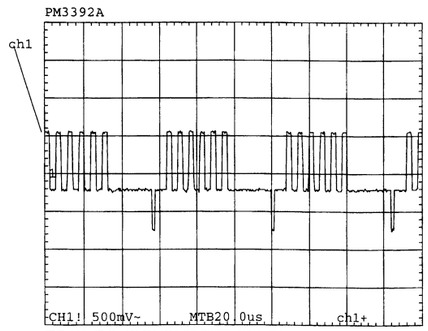
TP26: GO (COLOURSETUP HI)



TP 26: GO (COLOURSETUP LO)



TP27: BO (COLOURSETUP HI)



TP27: BO (COLOURSETUP LO)

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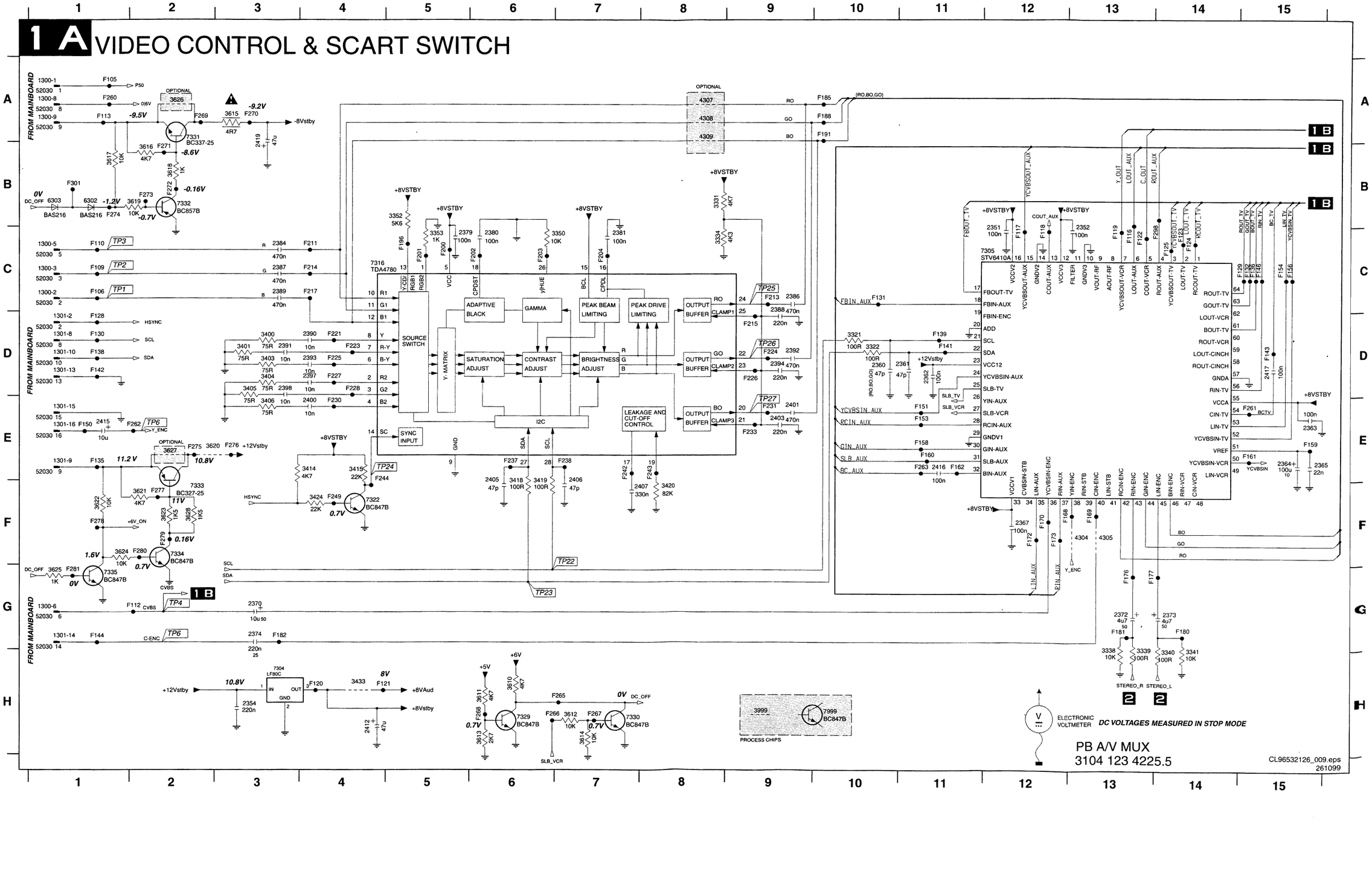
Personal notes:

DVD751 /001

1300-1 A1	1301-14 G1	2360 D10	2373 G14	2389 C3	2401 E9	2419 A3	3350 C7	3414 E4	3612 H7	3621 F2	4304 F13	7316 C4	7999 H10	F118 C12	F129 C15	F142 D1	F158 E11	F173 F12	F196 C5	F215 D9	F230 E4	F260 A1	F270 A3	F279 F2
1300-2 C1	1301-15 E1	2361 D11	2374 G3	2390 D4	2403 E9	3321 D10	3352 B5	3415 E4	3613 H6	3622 F1	4305 F13	7322 F4	F105 A1	F119 C13	F130 D1	F143 D15	F159 E15	F176 G13	F200 C5	F217 C4	F231 E9	F261 E15	F271 B2	F280 F2
1300-3 C1	1301-16 E1	2362 D11	2379 C5	2391 D3	2405 F6	3322 D10	3353 C5	3418 F6	3614 H7	3623 F2	4307 A8	7329 H6	F106 C1	F120 H4	F131 C10	F144 G1	F160 E11	F177 G13	F201 C5	F221 D4	F233 E9	F262 E2	F272 B2	F281 G1
1300-5 C1	1301-2 D1	2363 E15	2380 C6	2392 D9	2406 F7	3331 B8	3400 D3	3419 F6	3615 A3	3624 F1	4308 A8	7330 H7	F109 C1	F121 H4	F132 C15	F146 C15	F161 E15	F180 G14	F202 C6	F223 D4	F237 E6	F263 E11	F273 B2	F298 C14
1300-6 G1	1301-8 D1	2364 E15	2381 C7	2393 D4	2407 F8	3334 C8	3401 D3	3420 F8	3616 B2	3625 G1	4309 A8	7331 A2	F110 C1	F122 C13	F135 E1	F150 E1	F162 E11	F181 G13	F203 C6	F224 D9	F238 E7	F265 H7	F274 B1	F301 B1
1300-8 A1	1301-9 E1	2365 E15	2384 C3	2394 D9	2412 H4	3338 H13	3403 D3	3424 F4	3617 B1	3626 A2	6302 B1	7332 B2	F112 G2	F123 C14	F136 C15	F151 E11	F168 F12	F182 G3	F204 C7	F225 D4	F242 E7	F266 H6	F275 E2	
1300-9 A1	2351 C12	2367 F12	2386 C9	2397 D4	2415 E1	3339 H13	3404 D3	3433 H4	3618 B2	3627 E2	6303 B1	7333 F2	F113 A1	F124 C14	F138 D1	F153 E11	F169 F13	F185 A10	F211 C4	F226 D9	F243 E8	F267 H7	F276 E3	
1301-10 D1	2352 C13	2370 G3	2387 C3	2398 D3	2416 E11	3340 H14	3405 D3	3610 H6	3619 B2	3628 F2	7304 H3	7334 F2	F116 C13	F125 C14	F139 D11	F154 C15	F170 F12	F188 A10	F213 C9	F227 D4	F244 F4	F268 H6	F277 F2	
1301-13 D1	2354 H3	2372 G13	2388 D9	2400 E4	2417 D15	3341 H14	3406 E3	3611 H6	3620 E2	3999 H9	7305 C11	7335 G1	F117 C12	F128 D1	F141 D11	F156 C15	F172 F12	F191 A10	F214 C4	F228 D4	F249 F4	F269 A2	F278 F1	



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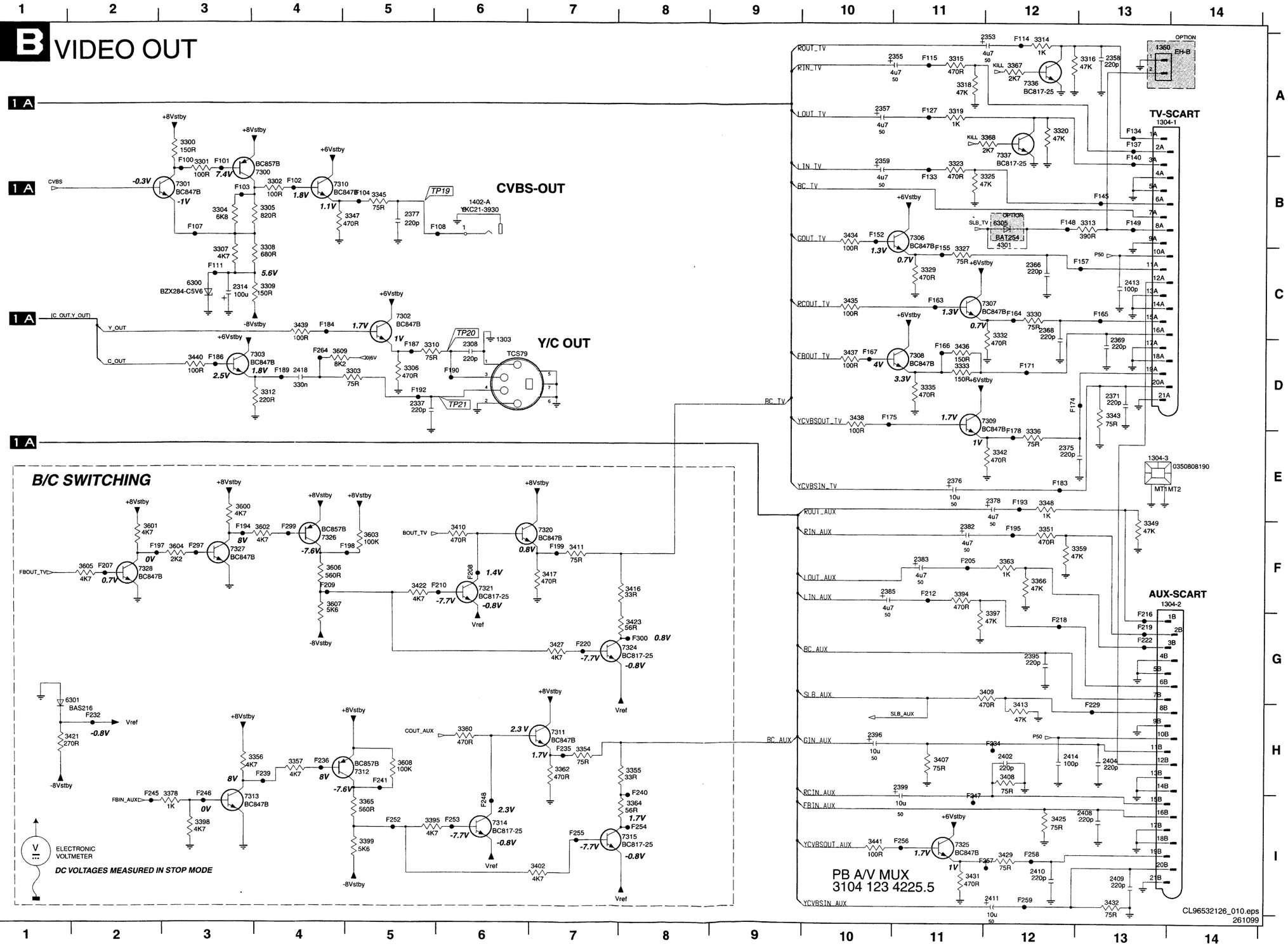
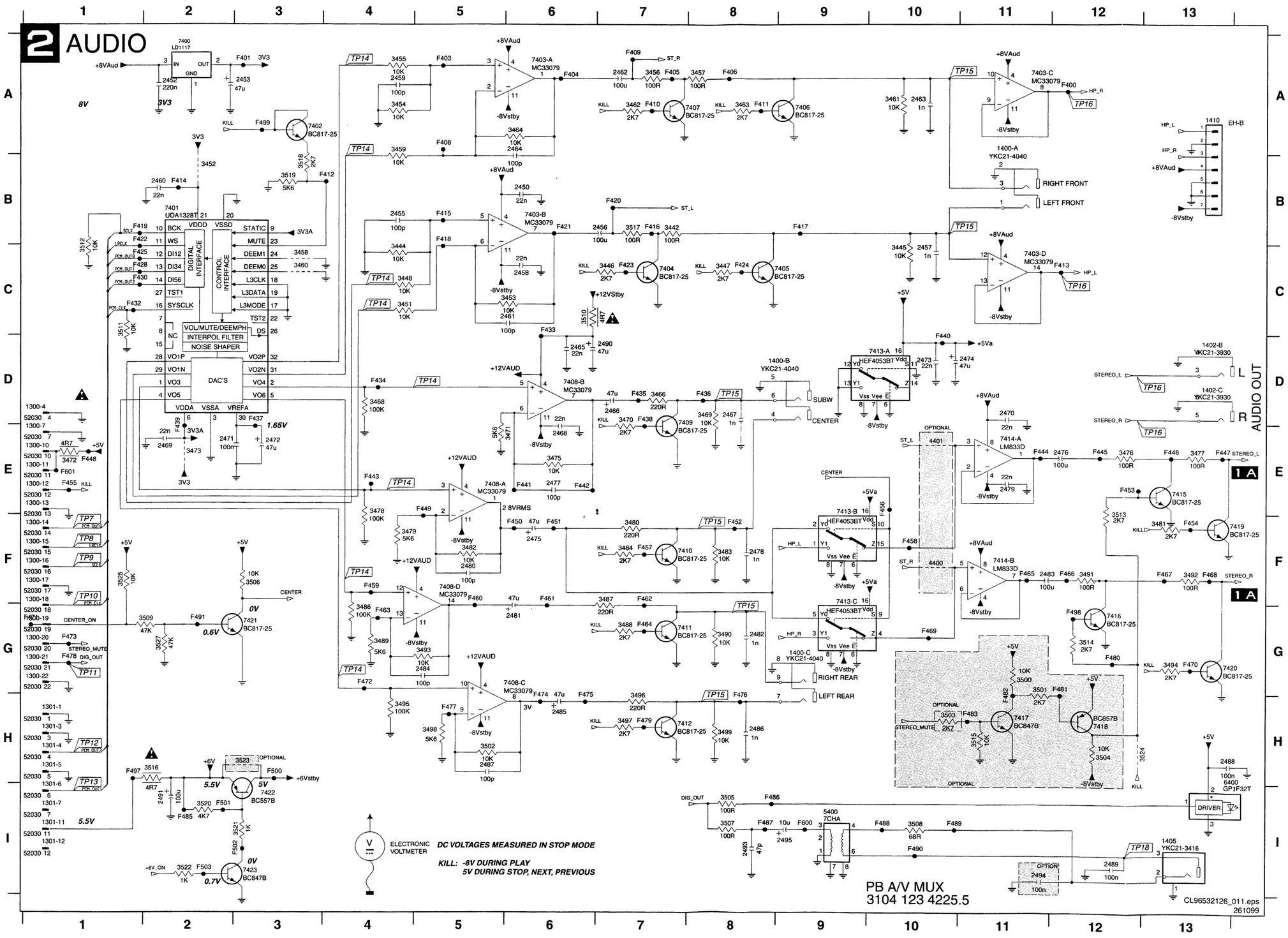
1 B VIDEO OUT



1303 D6	3601 F2	3316 A13	F148 B12
1304-1 A13	3602 F4	3318 A11	F149 B13
1304-2 F13	3603 F5	3319 A11	F152 B10
1304-3 E13	3604 F3	3320 A12	F155 C11
1350 A13	3605 F2	3323 B11	F157 C13
1402-A B6	3606 F4	3325 B12	F163 C11
2308 D6	3607 F4	3327 C11	F164 C12
2314 C3	3608 H5	3329 C11	F165 C13
2337 D5	3609 D4	3330 C12	F166 D11
2353 A12	4301 C12	3332 C12	F167 D10
2355 A11	6300 C3	3333 D11	F171 D12
2357 A10	6301 H2	3335 D11	F174 D12
2358 A13	6305 B12	3336 E12	F175 D10
2359 B10	7300 B4	3342 E12	F178 E12
2366 C12	7301 B3	3343 D13	F183 E12
2368 C12	7302 C5	3345 B5	F184 C4
2369 C13	7303 D3	3347 B5	F186 D3
2371 D13	7306 B11	3348 E12	F187 D5
2375 E12	7307 C11	3349 F13	F189 D4
2376 E11	7308 D11	3351 F12	F190 D6
2377 B5	7309 D11	3354 H7	F192 D5
2378 E12	7310 B4	3355 H8	F193 E12
2382 F11	7311 H7	3356 H4	F194 F3
2383 F11	7312 H5	3357 H4	F195 F12
2385 F10	7313 I3	3359 F13	F197 F2
2395 G12	7314 I6	3360 H6	F198 F5
2396 H10	7315 I8	3362 H7	F199 F7
2399 H11	7320 F7	3363 F12	F205 F11
2402 H12	7321 F6	3364 I8	F207 F2
2404 H13	7324 G8	3365 I5	F208 F6
2408 I13	7325 I11	3366 F12	F209 F4
2409 I13	7326 F4	3367 A12	F210 F6
2410 I12	7327 F3	3368 A12	F212 F11
2411 I12	7328 F2	3378 I3	F216 G13
2413 C13	7336 A12	3394 F11	F218 G12
2414 H12	7337 B12	3395 I5	F219 G13
2418 D4	F100 B3	3397 G12	F220 G7
3300 A3	F101 B3	3398 I3	F222 G13
3301 B3	F102 B4	3399 I5	F229 H13
3302 B4	F103 B3	3402 I7	F232 H2
3303 D5	F104 B5	3407 H11	F234 H12
3304 B3	F107 B3	3408 H12	F235 H7
3305 B4	F108 B6	3409 G12	F236 H4
3306 D5	F111 C3	3410 F6	F239 H4
3307 C3	F114 A12	3411 F7	F240 H8
3308 C4	F115 A11	3413 H12	F241 H5
3309 C4	F127 A11	3416 F8	F245 I2
3310 D5	F133 B11	3417 F7	F246 I3
3312 D4	F134 A13	3421 H2	F247 I11
3313 B13	F137 A13	3422 F5	F248 I6
3314 A12	F140 B13	3423 G8	F252 I5
3315 A11	F145 B13	3425 I12	F253 I6
3316 A13	F148 B12	3427 G7	F254 I8
3318 A11	F149 B13	3429 I12	F255 I7
3319 A11	F152 B10	3431 I11	F256 I11
3320 A12	F155 C11	3432 I13	F257 I12
3323 B11	F157 C13	3434 B10	F258 I12
3325 B12	F163 C11	3435 C10	F259 I12
3327 C11	F164 C12	3436 D11	F264 D4
3329 C11	F165 C13	3437 D10	F297 F3
3330 C12	F166 D11	3438 D10	F299 F4
3332 C12	F167 D10	3439 C4	F300 G8
3333 D11	F171 D12	3440 D3	
3335 D11	F174 D12	3441 I10	
3336 E12	F175 D10	3600 E3	
3342 E12	F178 E12		
3343 D13	F183 E12		
3345 B5	F184 C4		
3347 B5	F186 D3		
3348 E12	F187 D5		
3349 F13	F189 D4		
3351 F12	F190 D6		
3354 H7	F192 D5		
3355 H8	F193 E12		
3356 H4	F194 F3		
3357 H4	F195 F12		
3359 F13	F197 F2		
3360 H6	F198 F5		
3362 H7	F199 F7		
3363 F12	F205 F11		
3364 I8	F207 F2		
3365 I5	F208 F6		
3366 F12	F209 F4		
3367 A12	F210 F6		
3368 A12	F212 F11		
3378 I3	F216 G13		
3394 F11	F218 G12		
3395 I5	F219 G13		
3397 G12	F220 G7		
3398 I3	F222 G13		
3399 I5	F229 H13		
3402 I7	F232 H2		
3407 H11	F234 H12		
3408 H12	F235 H7		
3409 G12	F236 H4		
3410 F6	F239 H4		
3411 F7	F240 H8		
3413 H12	F241 H5		
3416 F8	F245 I2		
3417 F7	F246 I3		
3421 H2	F247 I11		
3422 F5	F248 I6		
3423 G8	F252 I5		
3425 I12	F253 I6		
3427 G7	F254 I8		
3429 I12	F255 I7		
3431 I11	F256 I11		
3432 I13	F257 I12		
3434 B10	F258 I12		
3435 C10	F259 I12		
3436 D11	F264 D4		
3437 D10	F297 F3		
3438 D10	F299 F4		
3439 C4	F300 G8		
3440 D3			
3441 I10			
3600 E3			

DVD751 /001



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1300-11 E1
1300-12 E1
1300-13 E1
1300-14 F1
1300-15 F1
1300-16 F1
1300-17 F1
1300-18 F1
1300-19 G1
1300-20 G1
1300-21 G1
1300-22 G1
1300-4 D1
1300-7 E1
1301-1 H1
1301-11 I1
1301-12 I1
1301-3 H1
1301-4 H1
1301-5 H1
1301-6 I1
1301-7 I1
1400-A A11
1400-B D9
1400-C G9
1402-B D13
1402-C D13
1405 I13
1410 A13
2450 B6
2452 A2
2453 A3
2455 B4
2456 B7
2457 C10
2458 C6
2459 A4
2460 B2
2461 C6
2462 A7
2463 A10
2464 A6
2465 D6
2466 D7
2467 D8
2468 E6
2469 E2
2470 D11
2471 E2
2472 E3
2473 D10
2474 D11
2475 F6
2476 E12
2477 E6
2478 F8
2479 E11
2480 F5
2481 G6
2482 G8
2483 F11
2484 G5
2485 H6
2486 H8
2487 H5
2488 H13
2489 I12
2490 D7
2491 I2
2493 I8
2494 I12
2495 I9
3442 B7
3444 C4
3445 C10
3446 C7
3447 C8
3448 C4
3451 C4
3452 B2
3453 C6
3454 A4
3455 A4
3456 A7
3457 A8
3458 C3
3459 A4
3460 C3
3461 A10
3462 A7
3463 A8
3464 A6
3466 D7
3468 D4
3469 D8
3470 D7
3471 E6
3472 E1
3473 E2
3475 E6
3476 E12
3477 E13
3478 E4
3479 F4
3480 F7
3481 F13
3482 F5
3483 F8
3484 F7
3486 G4
3487 F7
3488 G7
3489 G4
3490 G8
3491 F12
3492 F13
3493 G5
3494 G13
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3496 H7
3497 H7
3498 H5
3499 H8
3500 G11
3501 G11
3502 H5
3503 H10
3504 H12
3505 I8
3506 F3
3507 I8
3508 I10
3509 G2
3510 C6
3511 C1
3512 C1
3513 F12
3514 G12
3515 H11
3516 H2
3517 B7
3518 B3
3519 B3
3520 I2
3521 I3
3522 I2
3523 H3
3524 H13
3525 F1
3527 G2
4400 I9
6400 H13
7400 A2
7401 B2
7402 A3
7403-A A6
7403-B B6
7403-C A11
7403-D C11
7404 C7
7405 C8
7406 A9
7407 A7
7408-A E5
7408-B D6
7408-C G5
7408-D F5
7409 D7
7410 F7
7411 G7
7412 H7
7413-A D10
7413-B E9
7413-C F9
7414-A E11
7414-B F11
7415 E13
7416 G12
7417 H11
7418 H12
7419 F13
7420 G13
7421 G3
7422 I3
7423 I3
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F401 A3
F403 A5
F404 A6
F405 A7
F406 A8
F408 A5
F409 A7
F410 A7
F411 A8
F412 B4
F413 C12
F414 B2
F415 B5
F416 B7
F417 B9
F418 B5
F419 B1
F420 B7
F421 B6
F422 B1
F423 C7
F424 C8
F425 C1
F428 C1
F430 C1
F432 C1
F433 C6
F434 D4
F435 D7
F436 D8
F437 D3
F438 D7
F439 E2
F440 D10
F441 E6
F442 E6
F443 E4
F444 E11
F445 E12
F446 E13
F447 E13
F448 E1
F449 E5
F450 F6
F451 F6
F452 F8
F453 E12
F454 F13
F455 E1
F456 E10
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F458 F10
F459 F4
F460 F5
F461 F6
F462 F7
F463 G4
F464 G7
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F466 F12
F467 F13
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F469 G13
F470 G13
F471 G1
F472 G4
F473 G1
F474 H6
F475 H6
F476 H8
F477 H5
F478 G1
F479 H7
F480 G12
F481 G12
F482 H11
F483 H11
F485 I2
F486 I8
F487 I10
F488 I10
F489 I10
F490 I10
F491 G2
F497 H1
F498 G12
F499 A3
F500 H3
F501 I2
F502 I3
F503 I2
F600 I9
F601 E1

DVD751 /001

1300 A3 2353 B6 2378 B6 2400 A4 2456 B3 2483 B3 3332 B6 3395 A6 3423 B6 3454 B2 3473 A1 3514 B4 3610 A3 3623 A4 6400 B1 7313 A6 7334 A4 7421 B3
1301 A4 2355 B6 2382 A6 2401 B5 2459 B2 2485 B2 3336 B6 3398 A6 3424 B4 3455 D2 3475 A5 3515 B4 3611 A3 3624 A4 7300 B4 7316 A5 7335 B4 7422 B5
1303 B5 2357 A6 2383 B6 2402 B6 2460 B1 2490 B1 3342 B6 3402 A6 3427 A6 3456 B3 3479 A1 3518 B1 3612 A3 3625 B4 7301 B4 7320 B6 7400 A2 7423 B5
1304 B6 2359 B6 2384 B4 2411 A6 2462 B2 2491 B5 3352 B4 3405 A4 3432 B6 3457 B3 3486 A1 3519 B1 3613 A3 3626 A3 7302 B5 7321 A6 7401 A1 7999 B2
1350 A5 2362 A6 2385 A6 2412 A4 2466 B2 2495 B2 3353 A4 3406 A4 3434 B6 3458 B1 3489 A1 3523 B5 3614 A3 3627 A4 7303 B5 7324 B6 7402 B1
1400 B2 2364 A5 2387 B4 2414 B6 2468 A1 3300 B4 3354 A6 3408 B6 3459 B2 3495 A1 3524 B5 3615 A3 3628 A4 7304 B3 7327 A6 7406 B3
1402 B4 2367 A6 2389 B4 2415 A4 2469 A1 3302 B4 3355 A6 3409 B6 3460 B1 3498 A1 3525 A5 3617 A2 4308 A5 7305 A6 7328 A6 7407 B3
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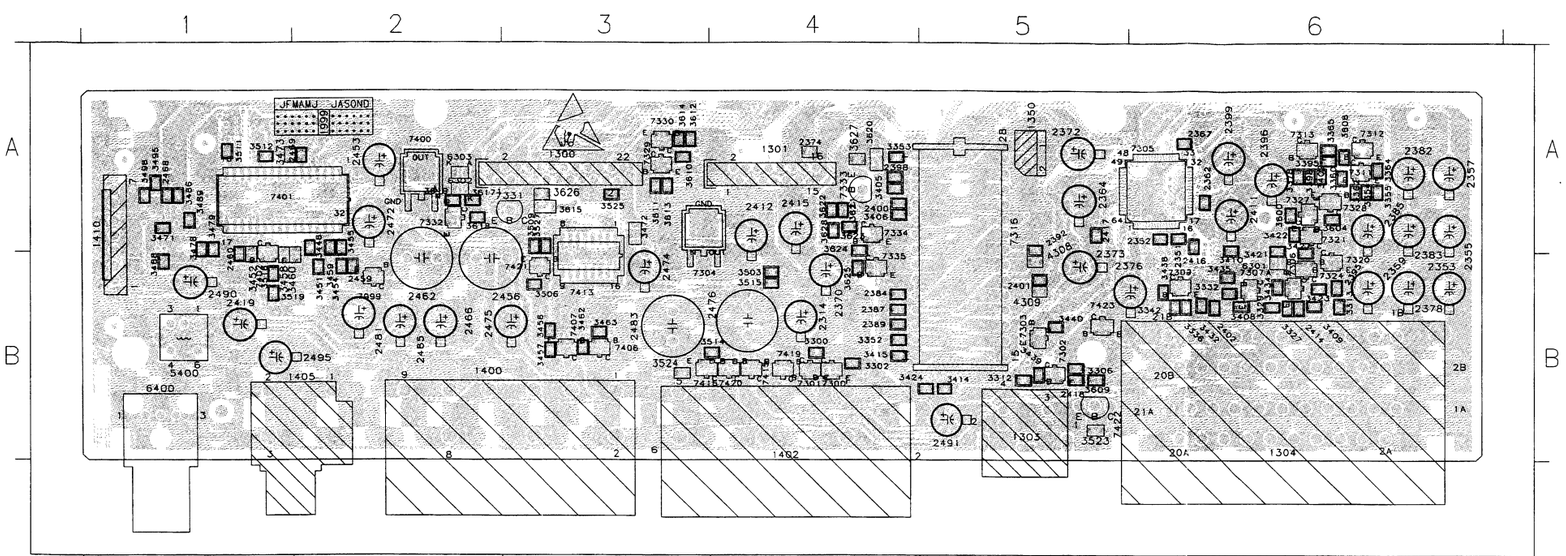

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2368 A1 2393 A2 2450 A5 2473 A4 2494 A6 3318 A1 3338 A2 3357 A1 3404 A2 3433 A4 3466 A5 3488 A5 3504 A4 3602 A1 4401 A4 7403 A5
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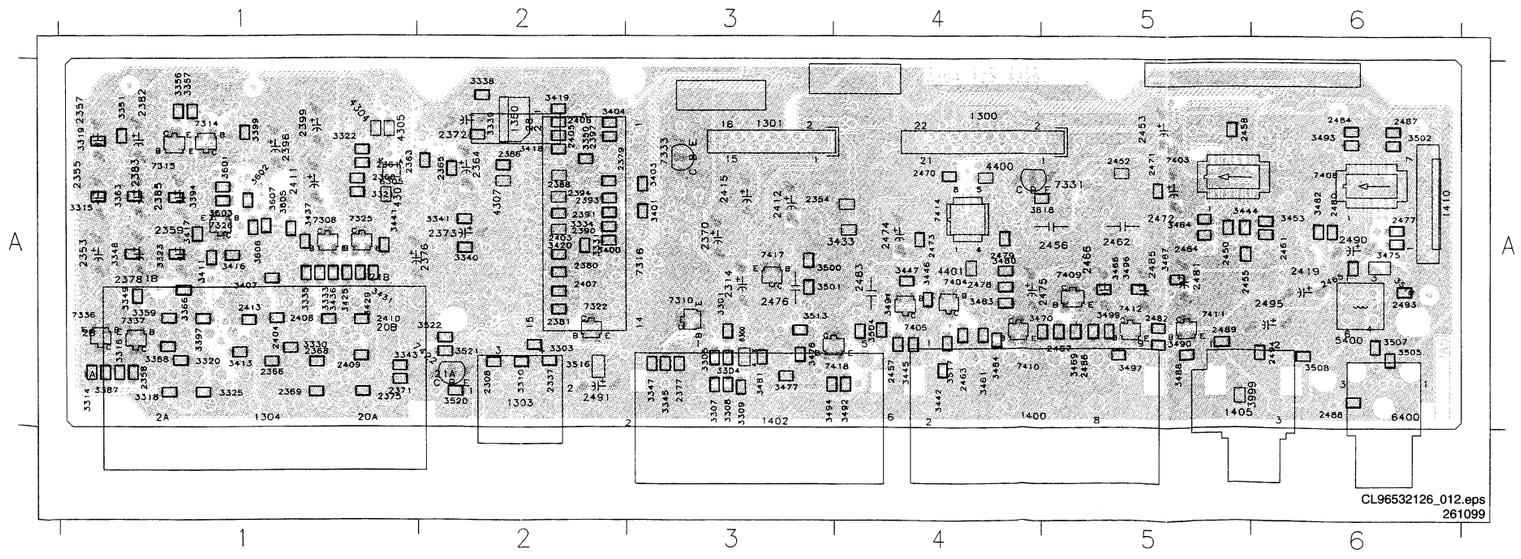
2371 A1 2397 A2 2455 A5 2478 A4 3303 A2 3320 A1 3340 A2 3363 A1 3411 A1 3437 A1 3470 A4 3491 A4 3507 A6 3605 A1 6305 A1 7405 A4



7. DIAGNOSTIC SOFTWARE : SCRIPT INTERFACES

7.1 DEALER SCRIPT

7.1.1 Purpose of Dealer Script

The dealer script can give a diagnosis on a standalone DVD player; no other equipment is needed to perform a number of hardware tests to check if the DVD player is faulty. The diagnosis is simply a "error" or "pass" message; no indication is given of faulty hardware modules. Only tests within the scope of the diagnostic software will be executed hence only faults within this scope can be detected.

7.1.2 Contents of Dealer Script

The dealer script executes all diagnostic nuclei that do not need any user interaction and are meaningful on a standalone DVD player.
The nuclei called in the dealer script are the following (the number after each nucleus name corresponds with the number being on the local display when the nucleus is executed during the dealer script):

Nucleus		Description
VideoColSetupComm	9	Checks the I2C interface with the RGB video processor on the Audio/Video board (only for DVD players with RGB video processor).
VideoScartSwComm	8	Checks the I2C interface with the scart switch on the Audio/Video board
PapChksFl	7	Calculate and verify checksum of FLASH memory.
PapDramWrR	6	Pattern test of all locations in the DRAM(s).
PapI2cDisp	5	Checks the I2C interface with the slave processor on the display PCB.
PapS2bEcho	4	Checks the I2C interface to the basic engine.
PapI2cNvram	3	Checks the I2C interface with the NVRAM.
PapNvramWrR	2	Pattern test of all locations in the NVRAM
CompSdramWrR	1	Pattern test of all locations in the SDRAM(s).

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120799

Figure 7-1

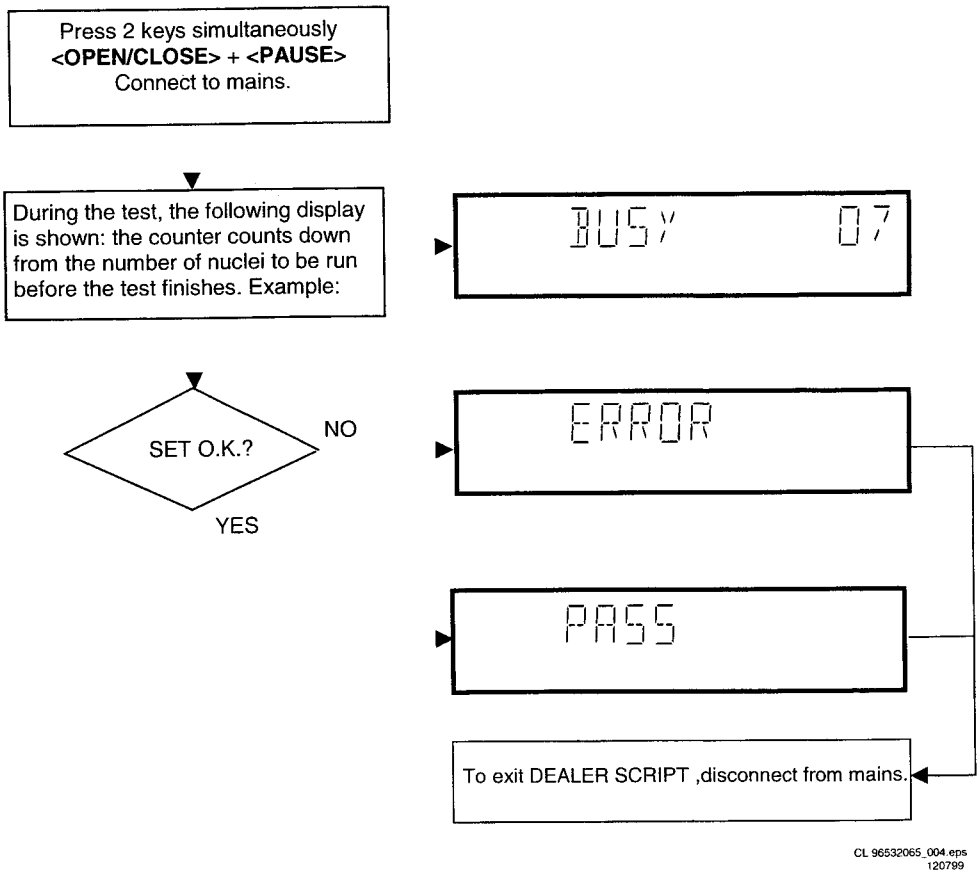
Press 2 keys simultaneously
<OPEN/CLOSE> + <PAUSE>
Connect to mains.
During the test, the following display is shown: the counter counts down from the number of nuclei to be run before the test finishes. Example:
BUSY 07
SET O.K.?
NO
YES
ERROR
PASS
To exit DEALER SCRIPT ,disconnect from mains.

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Figure 7-2

7.2 PLAYER SCRIPT

7.2.1 Purpose of Player Script

The Player script will give the opportunity to perform a test that will determine which of the DVD player's modules are faulty, to read the error log and error bits and to perform an endurance loop test. To successfully perform the tests, the DVD player must be connected to a tv set to check the output of a number of nuclei. For DVDv2b a multi-channel amplifier, a set of 6 boxes and an external video source are necessary to test. To be able to check results of certain nuclei, the player script expects some interaction of the user (i.e. to approve a test picture or a test sound). Some nuclei (e.g. nuclei that test functionality of the Basic Engine module) require that the DVD player itself is opened, to enable the user to observe moving parts and approve their movement visually. Only tests within the scope of the diagnostic software will be executed hence only faults within this scope can be detected.

7.2.2 Contents of Player Script

The player script contains all nuclei that are useful on a DVD player that is connected to a tv-set and help to determine which module of the DVD player is faulty, as well as to read out the contents of the error logs.

7.2.3 Structure of Player Script

The player script consists of a set of nuclei testing the three hardware modules in the DVD player: the Display PWB, the Digital PWB and the Basic Engine.
Nuclei run by the player test need some user interaction; in the next paragraph this interaction is described. The player test is done in two phases:

1. Interactive tests: this part of the player test depends strongly on user interaction and input to determine nucleus results and to progress through the full test. Reading the error log and error bits information can be useful to determine any errors that occurred recently during normal operation of the DVD player.
2. The loop test will perform the same nuclei as the dealer test, but it will loop through the list of nuclei indefinitely.

7.2.4 Survey

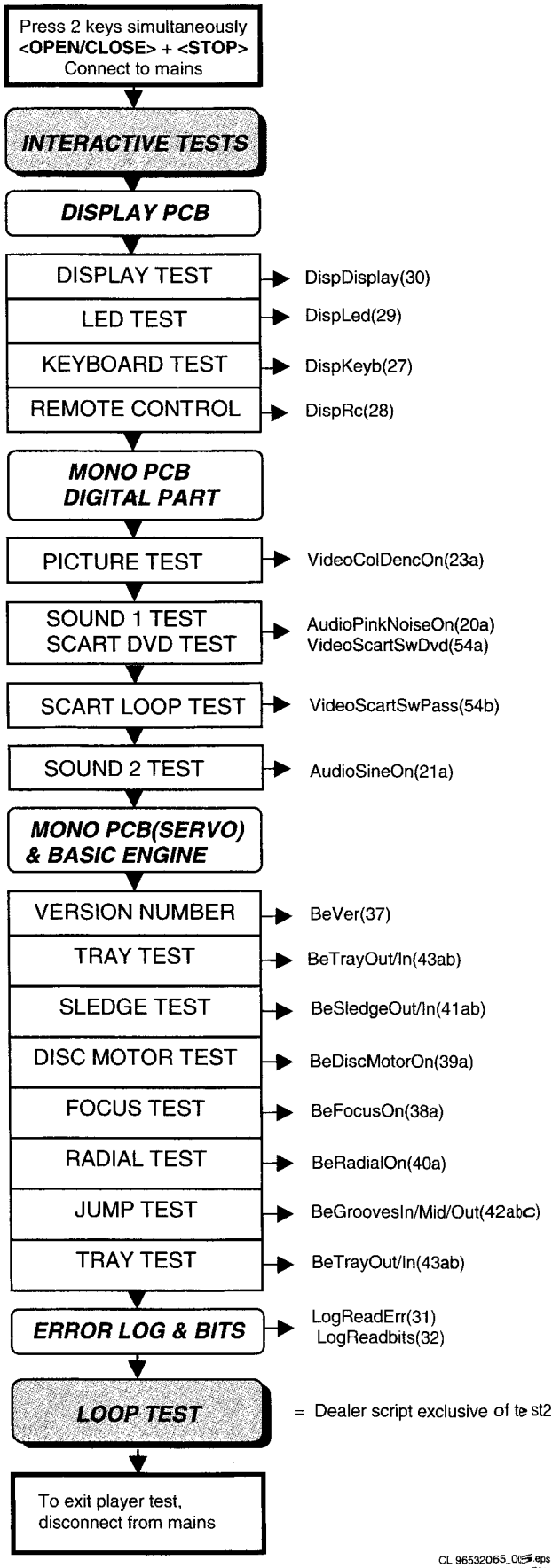

Figure 7-3

8. INTERACTIVE TESTS

8.1 DISPLAY PCB

8.1.1 DISPLAY TEST

The display test is performed by nucleus DispDisplay. By putting a series of test patterns on the local display, the local display is tested. To step through all different patterns, the user must either press PLAY (pattern is ok) or PAUSE (pattern was incorrect) to proceed to the next pattern. The display of patterns is continued in a cyclic manner until the user presses NEXT. If the user presses NEXT before all display patterns are tested, the DispDisplay nucleus will return TRUE (display test successful).

8.1.2 LED TEST

The LED(s) on the DVD player is (are) tested by nucleus DispLed. The user must check if the LED(s) is (are) lighted; if it is, press PLAY, if it is not, press PAUSE. By pressing NEXT the script will proceed to the next test. If the user presses NEXT before PLAY or PAUSE, the DispLed nucleus will return TRUE (LED test successful).

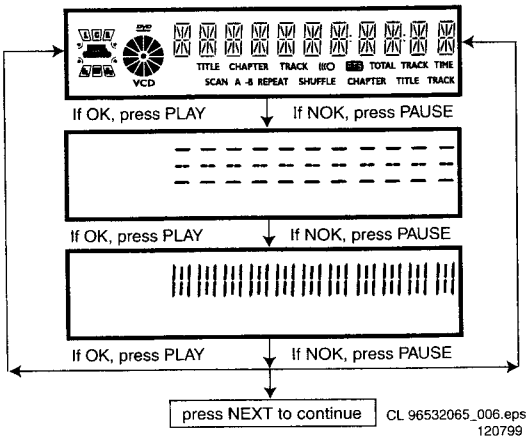

Figure 8-1

8.1.3 KEYBOARD TEST

The keyboard of the DVD player is tested by nucleus DispKeyb. The user is expected to press all keys on the local keyboard once. The code of the key pressed is shown on the local display (1 hexadecimal digit) immediately followed by a (hexadecimal) number indicating how many times that key has been pressed. Example of the local display during this test:

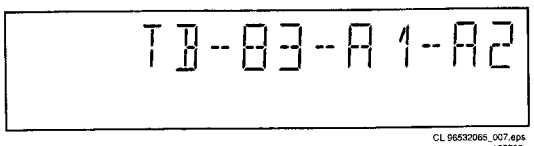

Figure 8-2

The key-codes displayed on the local display will scroll from right to left when the display gets full, the text "tb-" will remain on display.

key id.	key
0	PLAY
1	NEXT
2	PREVIOUS
3	PAUSE
4	STOP
5	REPEAT
6	FTS
7	SCAN
8	BACKWARD
9	OPEN / CLOSE
A	FORWARD
B	SHUFFLE

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120799

Figure 8-3

If any keys are detected more than once (due to hardware error), the key-code is displayed twice (or more), with the second digit increased by 1.
If the user does not press all keys minimally once (in any order), the DispKeys nucleus will return FALSE and cause an error in the overall result of the player script.
The user can leave the keyboard test by pressing the NEXT key on the local display of the DVD player for at least one full second.
The result of the keyboard test is shown on local display as follows:

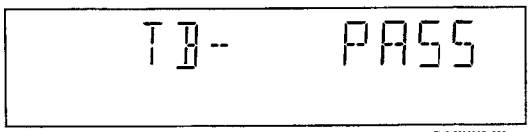


Figure 8-4

Or

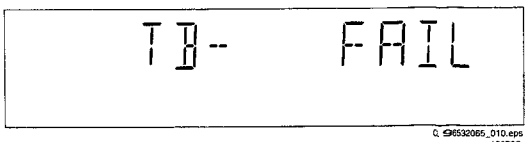


Figure 8-5

Pressing NEXT on the local keyboard again will proceed to the next text.

8.1.4 REMOTE CONTROL TEST

The remote control of the DVD player is tested by nucleus DispRc. The user must press any key on the remote control just once. The codes of the key pressed will be shown on the local display in hexadecimal format. Example:

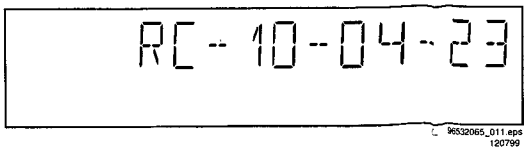


Figure 8-6

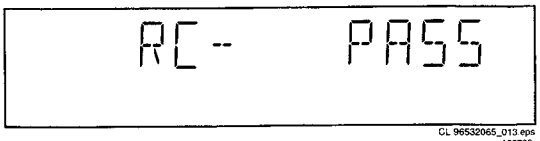
In this example 23 is the hexidecimal code of the pressed RC key. The user can leave the remote-control test by pressing NEXT on the local keyboard of the DVD player. The remote control test is successful if a code was received before the user pressed the NEXT key; pressing the NEXT key before pressing a key on the remote control gives an error in the remote control test (note that the remote control test will also fail if a key on the remote control was pressed but no code was received). The remote control test does not check upon the contents of the received code, that is it will not be checked if the received code matches the key pressed. If desired, the user can manually check this code by using a code-table for the remote control key-codes.

RC Key id	Hexadecimal code
STANDBY	C
STOP	31
PLAY	2C
PLAY BACKWARD	2D
PAUSE	30
STEP FORWARD	F6
STEP BACKWARD	F5
FORWARD	28
FORWARD 4X	DF
FORWARD 8X	E0
BACKWARD	29
BACKWARD 4X	DE
BACKWARD 8X	DD
SLOW	22
SLOW 2	D8
SLOW BACKWARD	23
SLOW BACKWARD 2	DB
NEXT	20
PREVIOUS	21
CURSOR UP	58
CURSOR DOWN	59
CURSOR LEFT	5A
CURSOR RIGHT	5B
OK	5C
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
TOGGLE	C8
ANGLE	85
AUDIO	4E
SUBTITLES	4B
SUBTITLE ON/OFF	E3
ROOT MENU	54
TITLE MENU	71
MENU	D1
SETUP MENU	82
OSD ON/OFF	F
RETURN	83
RESUME	D7
SCAN	2A
SHUFFLE	1C
REPEAT	1D
A/B REPEAT	3D
TOGGLE SCART	43
OPEN/CLOSE	42
FTS	FB
KARAOKE	E4
OPTION	FA

CL 96532065_012.eps 120799

Figure 8-7

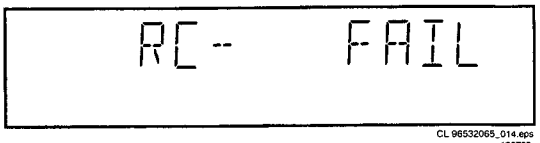
After pressing NEXT, the result of the remote control test is displayed on the local display of the DVD player as follows:



CL 96532065_013.eps 120799

Figure 8-8

Or



CL 96532065_014.eps 120799

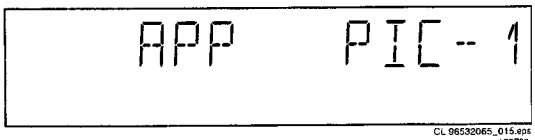
Figure 8-9

Pressing NEXT on the local keyboard again will proceed to the next test.

8.2 MONO PCB DIGITAL PART

8.2.1 PICTURE TEST

The picture test is performed by putting a predefined picture (colour bar) on the display (nucleus VideoColDencOn) and asking the user for confirmation. The display will show the following message:



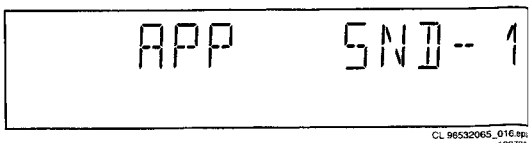
CL 96532065_015.eps 120799

Figure 8-10

By pressing PLAY the user confirms the test, pressing PAUSE will indicate the picture was invisible or incorrect. Pressing NEXT will proceed to the next test

8.2.2 SOUND 1 & SCART DVD TEST

The first soundtest is performed by starting a pink noise sound that needs confirmation from the user (nucleus AudioPinkNoiseOn); the display will show the following message very shortly:



CL 96532065_016.eps 120799

Figure 8-11

This sound will only be audible from version cut3.1 of Sti5505(item7503 on mono board) onwards. After starting up sound 1, SCART loop-trough will be simultaneously active during this test. SCART loop-trough will be measured with the aid of an external video source.
When entering the SCART loop-trough, the local display indicates:

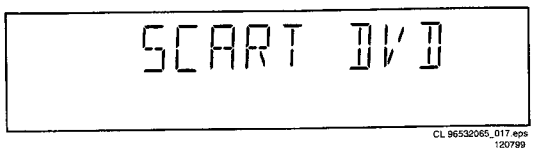


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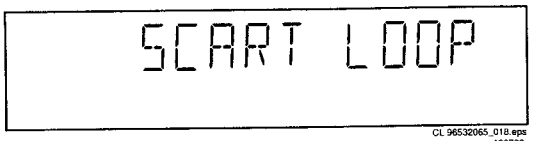
Figure 8-12

On the TV screen a colour bar (generated by nucleus VideoColDencOn) is visual and the internally generated pinknoise is audible. By pressing PLAY the user confirms the test, pressing PAUSE will indicate the sound was inaudible or incorrect. Pressing NEXT will proceed to the next test; if the user presses NEXT without pressing PLAY or PAUSE first, the result of this test will be TRUE (sound ok). By pressing the NEXT button there will be switched over to the external source, this must become now visible on the TV screen (using the SCART). The local display indicates:



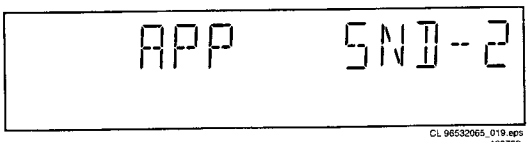
CL 96532065_018.eps 120799

Figure 8-13

The internally generated colour bar is still available on the CVBS and Y/C outputs. And the pinknoise-signal is still available on the cinch audio outputs. By pressing the PREV button, the internal generated colour bar becomes visual again. The test can be left by pressing the NEXT key for more than one second.

8.2.3 SOUND 2 TEST

The second soundtest is performed by producing a sine sound (nucleus AudioSineOn). The signal can be stopped by pressing the STOP-key. The display will show the following message:



CL 96532065_019.eps 120799

Figure 8-14

By pressing PLAY the user confirms the test, pressing PAUSE will indicate that something went wrong. Pressing NEXT will proceed to the next; if the user presses NEXT without pressing PLAY or PAUSE first, the result of this test will be TRUE (sound ok).

8.3 BASIC ENGINE

8.3.1 VERSION NUMBER

In the basic engine tests, the version number of the Basic Engine will be shown first, as the following example:

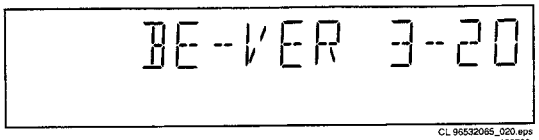


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Figure 8-15

By pressing the NEXT key, the Basic Engine tests are started.

8.3.2 TRAY TEST

First, the tray is tested. The purpose of this test is also to give the user the opportunity to put a disc in the tray of the DVD player. Some tests on the Basic Engine require that a disc(e.g. DVD MPTD test disc) is present in the player. At the end of the Basic Engine tests this tray test will be repeated solely to enable the user to remove the disc in the tray. The local display will look as follows:

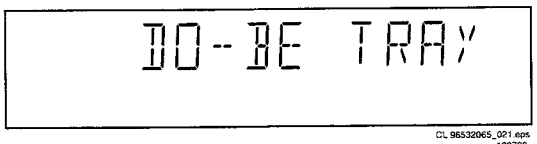

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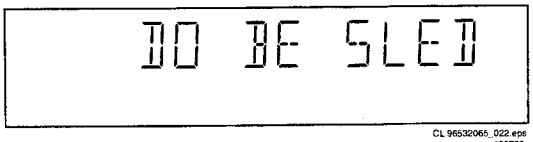
Figure 8-16

By pressing PLAY or PAUSE the user can toggle the position of the tray. Note that this test will not contribute to the test result of the Basic Engine. Pressing NEXT will proceed to the next test, after the tray has been closed (by the software) if it was open.

8.3.3 SLEDGE TEST(visual test)

The second Basic Engine test tests the sledge; the user can move the sledge as many times as desired by using PLAY (nucleus BeSledgeOut) and PAUSE (nucleus BeSledgeIn). Pressing NEXT on the local keyboard proceeds to the next test. Note that this test will not contribute to the test result of the Basic Engine. The local display will look as follows during the sledge test:



CL 96532065_022.eps 120799

Figure 8-17

8.3.4 DISC MOTOR TEST(visual test)

The third Basic Engine test tests the disc motor (nucleus BeDiscMotorOn); the local display looks as follows:

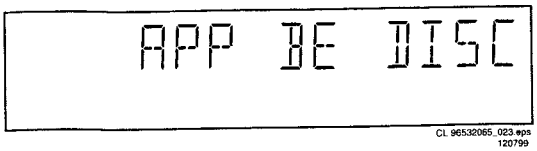


Figure 8-18

By pressing PLAY the user confirms that the disc motor is running; pressing PAUSE indicates the disc motor does not work. Pressing NEXT proceeds to the next test, after a reset of the disc motor (nucleus BeDiscMotorOff). If the user presses NEXT before pressing PLAY or PAUSE, the result of this test will be TRUE (disc motor is running).

8.3.5 FOCUS TEST(visual test)

The fourth Basic Engine test tests the focussing; first focussing is turned on by calling nucleus BeFocusOn. The display will look as follows:

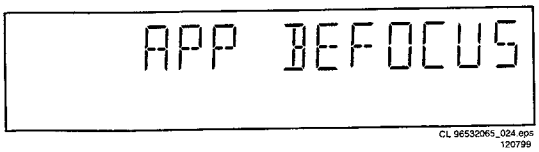


Figure 8-19

By pressing PLAY the user confirms that the focussing was succesful; pressing PAUSE indicates a focussing failure. Pressing NEXT proceeds to the next test after a reset of the focussing (nucleus BeFocusOff); if NEXT is pressed before PLAY or PAUSE, the result of this test will be TRUE (focus successful).

8.3.6 RADIAL TEST(visual & listening test)

The fifth Basic Engine test tests the radial functionality (nucleus BeRadialOn); the local display looks as follows:

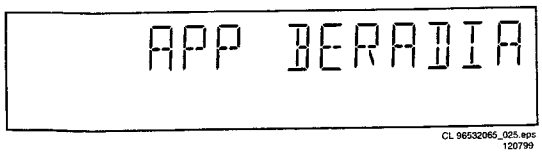


Figure 8-20

By pressing PLAY the user confirms that the radial function worked; pressing PAUSE indicates the function does not work. Pressing NEXT proceeds to the next test, after a reset of the radial (nucleus BeRadialOff). If the user presses NEXT before pressing PLAY or PAUSE, the result of this test will be TRUE (radial successful).

8.3.7 JUMP TEST(listening test)

The sixth and last Basic Engine test tests the jumping by calling nuclei BeGroovesIn, BeGroovesMid and BeGroovesOut. During this test, the local display looks as follows:

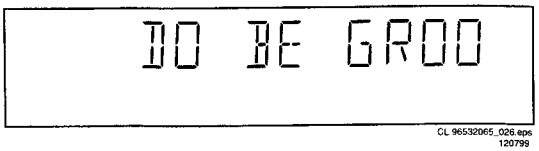


Figure 8-21

The user can switch between the three different types of groove settings by pressing PLAY (forward to next nucleus in the list In-Mid-Out) or PAUSE (backward in the list In-Mid-Out). This is done in a cyclic manner; note that this test will not contribute to the test result of the Basic Engine. Pressing NEXT proceeds to the next test, after the disc motor has been shut off with a call to nucleus BeDiscMotorOff.

8.3.8 TRAY TEST

As a last action for the Basic Engine tests, the tray test is repeated. The local display will look as follows:

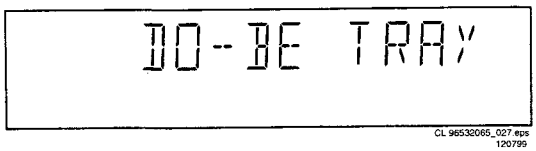


Figure 8-22

This test is meant to give the user the opportunity to remove the disc in the tray. The tray position can be toggled using the PLAY and PAUSE key. The tray will be closed (by the software, if it is open) before proceeding to the next test when the user presses the NEXT key.

8.3.9 ERROR LOG

Reading the error log and error bits information can be useful to determine any errors that occurred recently during normal operation of the DVD player. Reading the error log is done by nucleus LogReadErr. The display during the errorlog readout looks as follows :

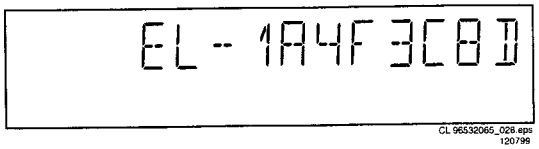


Figure 8-23

By pressing PLAY or PAUSE the user can move forward or backward (respectively) through the logged error codes. The highlighted number indicates which errorcode is currently on display (in the example above, errorcode number 4 is displayed). If "0000" is displayed at all positions, the error log is empty. Display of the logged errors is done in a cyclic manner. The errorcode with the lowest highlighted number is the most recent. By pressing NEXT on the local keyboard, the user can proceed to the next test.

8.3.10 ERROR BITS

Reading the error bits is done by nucleus LogReadBits. The display during the errorbits readout looks as follows:

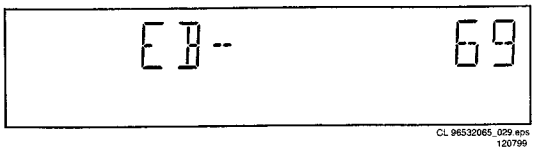


Figure 8-24

Only the set errorbits will be shown by their (decimal) number. Refer to the appropriate documentation for the explanation of each bit number. If the display only shows "EB-0", no error bits were set. By pressing NEXT the user can continue to the next test.
See table below:

Error log / bits table	Read ERROR LOG in player script	Read ERROR BITS in player script
Basic engine errors	Value:	Value:
Command to the Basic Engine not allowed in this state or unknown command	150101	8
Parameter(s) from the command to the Basic Engine is not valid	150102	7
Sledge could not be moved to the inner home position	150103	6
Focus failure	150104	5
Turntable motor speed could not be reached within timeout	150105	4
Radial servo could not get on track on the disc	150106	3
PLL could not lock in the accessing or tracking state	150107	2
Subcode or sector information could not be read	150108	1
requested subcode could not be found	150109	16
Tray could not be closed or opened completely	15010A	15
TOC could not be read within timeout	15010B	14
The requested seek on the disc could not be executed	15010C	13
A requested lead-in is not on the disc	15010D	12
A non existing burst cutting area is requested	15010E	11
S2b communication error	1501F0	10
S2b communication error	1501F1	9
S2b communication error	1501F3	24
S2b communication error	1501F4	23
S2b communication error	1501F5	22
Digital PWB errors		
Communication error with the Sti 5505	90000	32
Communication error with the Sti 5505	90001	31
Disply processor errors		
Communication error with the display processor	190000	40

8.4 LOOP TEST

At the start of the loop test, the display will show the result of the interactive player test:

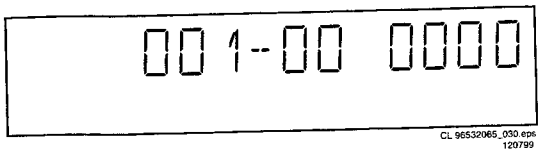


Figure 8-25

The left side of the display contains a 3-digit code, which can have a value between 000 and 111. These values are to be interpreted as follows:

Displayed Value	Indication for each module		
	Basic Engine	Mono PCB	Display PCB
000	ok	ok	ok
001	ok	ok	faulty
010	ok	faulty	ok
011	ok	faulty	faulty
100	faulty	ok	ok
101	faulty	ok	faulty
110	faulty	faulty	ok
111	faulty	faulty	faulty

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120799

Figure 8-26

The loop test will perform the same nuclei as the dealer test, but it will loop through the list of nuclei indefinitely. The display of the DVD player will display not only the three digits indicating correct/faulty modules and the last found error code (as mentioned, faults are detected as far as they can be within the scope of the diagnostic software), but also a loop counter indicating how many times the loop has been gone through. Example:

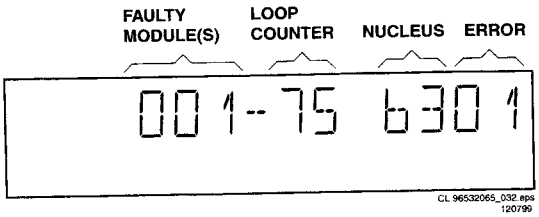

Figure 8-27

The number after the hyphen indicates the number of times the loop test has been performed; the 4 digits at the right side of the display show the last error that was found when running the loop test: the leftmost two digits of this code indicate which nucleus resulted in a fault; the rightmost two digits refer to the faultcode within that nucleus. For further explanation of this error code, see list of error codes below.

ERROR CODES LOOP TEST

ERROR CODE	NUCLEUS NUMBER	ERROR DESCRIPTION
0601	6	Calculated checksum of FLASH is not correct
0901	9	The DVD DRAM is faulty
1104	11	I2C bus busy before start
1102		NVRAM access time-out
1103		No NVRAM Acknowledge
1104		NVRAM reply time-out
1201	12	I2C bus busy
1202		I2C bus not working
1203		Slave controller not responding
1204		Slave response is not correct
1301	13	Parity error from basic engine to serial
1302		Parity error from serial to basic engine
1303		No communication between serial and basic engine
1304		Communication time-out error
1601	16	The SDRAM is faulty

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210799

Figure 8-28

8.5 Servicing DVD module and MONO board

The DVD module(Basic Engine and the mono board) has to be exchanged completely in case of failure. A new module for DVD750/001 can be ordered with codenumber 3104 129 51980.

Return the defective unit complete assembled in original package to Philips Consumer Service in Eindhoven

8.5.1 Reprogramming of new mono boards.

Caution

This information is confidential and may not be distributed. Only a qualified service person should reprogram the mono board.

After replacement of the mono board, all the customer settings and also the region code will be lost.
Reprogramming of the mono board will put the player back in the state in which it has left the factory, i.e. with the default settings and the allowed region code.
Reprogramming is limited to 25 times
When the counter reaches 25, reprogramming is not possible anymore
Reprogramming will be done by way of the remote control.
Put the player in stop mode, no disc loaded.
Press the following keys on the remote control:
<***PLAY***> followed by numerical keys ***<1> <5> <9>***
The display shows: "- - - - - - - - - -"
Press now successively the following keys :

for DVD711/001 : ***<0><5><3> <0><0><0><0><0><0><0><0> PAL / NTSC***
for DVD751/001 : ***<0><5><4> <0><0><0><0><0><0><0><0> PAL / NTSC***

Press <***PLAY***> again.
The TV screen will become BLUE during a short time to confirm that the mono board has been reprogrammed, then the set goes to standby mode.

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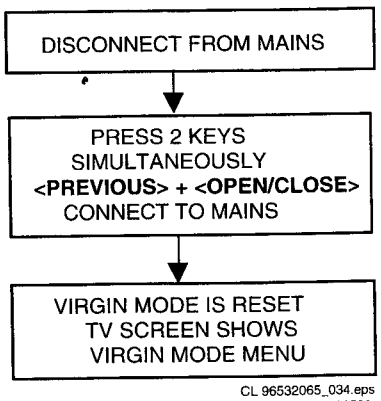
130400

Figure 8-29

8.5.2 Reset of Virgin Mode

After the player has been powered up for test by the dealer, it would have gone through the Virgin Mode. It is possible to reset the settings made during that mode before the delivery of player to the customer. This can be done as shown in the following diagram:

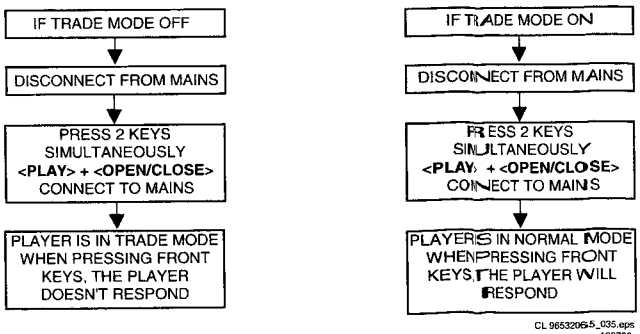


CL 96532065_034.eps
120799

Figure 8-30

TRADE MODE

When the player is in Trade Mode, the player cannotbe controlled by means of the front key buttons, but only by means of the remote control.



CL 96532065_035.eps
120799

Figure 8-31

9. Test instructions Display board

9.1 Display board

9.1.1 Introduction

These test instructions are written for all versions of the display PCB 3104 123 42230.
The contents of the PCB can be split up into next blocks:

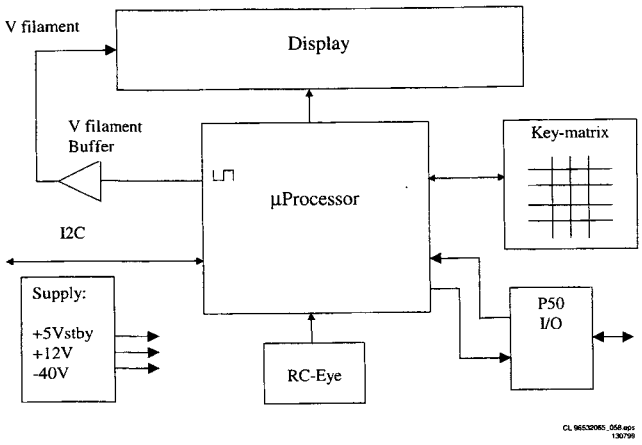


Figure 9-1

9.1.2 Functionality description:

The essential component of the display PCB is the µP (slave). This slave works on an 8MHz resonator and has a reset circuit that is triggered by the +5Vstby. After the reset pulse, the standby control line will release the reset of the host µP. This host µP will then initialise the slave. In addition, when going to stand-by, the slave will put the host µP in reset. When the slave receives the right IR or key code to leave the standby mode, the reset of the host µP will be released.
Other slave functions are:

- Square signal generator to generate the filament voltage, which is required for an AC FTD.
- Generates the grid and segment scanning for the FTD.
- Generates a scanning grid for the keys (separated from display scanning).
- Has inputs for RC (RC5 and RC6) and P50 (P50 controller is built in).

9.1.3 General

- Oscilloscope measurements have been carried out using a Philips PM3392A.
- Impedance of measuring-equipment should be > 1MΩ.
- To do correct measurements we recommend to use supply 3122 427 21370, which is used in all "second generation B" DVD-players. Make sure that the main 3.3V has a 0.7A load.

9.1.4 Reset

Check next reset timing with an oscilloscope at pin 10 of the microprocessor.

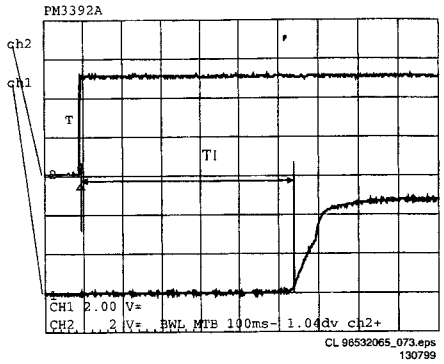


Figure 9-2

Timing: 400msec < T1 > 700msec.
CH1: +5Vstby voltage at power on.
CH2: Voltage at pin 10.

9.1.5 Display steering

Check next timing and level for all grid-lines (G1 r G14).

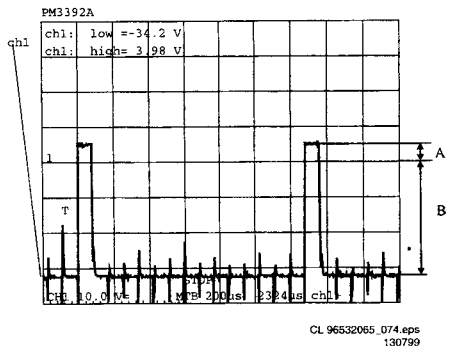


Figure 9-3

1. Check level A: +4V5 +/-10% for grid lines 1 => 11
2. Check level A: +4V0 +/-10% for grid lines 12 => 14
3. Check level B: -33V +/-10%
4. Check timing and levels of segment-lines P1 => P10:

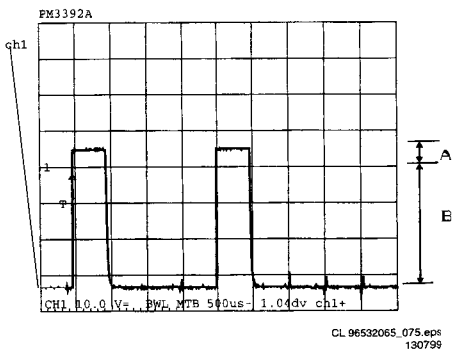


Figure 9-4

Level A:+4V5 +/-10%
Level B:-33V +/-10%
The data on these segment lines depend on the characters that are displayed.
The characters can be set by sending I2C commands to the display.
See the Slave URS how to send a display command.

9.1.6 Key-matrix

Connect a extra 10kΩ pull-up to pin 36 en 37 of the µP and check next matrix scanning at these pins.

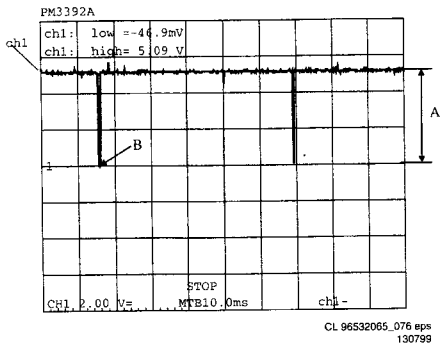


Figure 9-5

Level A: 5.0V +/-7%
Level B: 0V +/-200mV
Check matrix scanning from pin 26 until 33 of the µP.
The results should be the same as the diagram above.

9.1.7 I.R. receiver

Check at pin 23 of the µP if this line switches from low (< 0.3V) to high (> 4.5V), while pressing a key on a Philips RC5 or RC6 remote control.

9.1.8 Karaoke interface

The karaoke interface (4 lines) is a single direction communication.
This means that it consists of four µP output lines.
The interface can be checked by setting or resetting these output-ports via the I2C bus.
Send next command via the I2C bus:

Address	: 0x70
Command byte	: 0x24
Data byte	: xxxxabcd
Where	: a = Karaoke reset.
	: b = Karaoke data.
	: c = Karaoke clock.
	: d = Karaoke strobe.

9.1.9 P50 interface

P50 is a bi-directional serial interface, which is used for communication between video equipment. For European sets, this communication goes via pin 10 of the scart-bus. In other regions, it can be a cinch bus at the back of the set.

1. Keep the µP in reset by short-circuiting emitter and collector of transistor 7108, via resistor 3100 and 3104 transistor 7101 is switched on.
2. Check the voltage at the P50 output connector 1118-5: < 200mV.

When the reset is released the µP output-pin becomes low and transistor 7101 is switched off.

1. Check the voltage at the P50 output connector 1118-5: 4V9 +/-5%.
2. Check also the µP P50 input (µP pin 20): 5V +/-5%.
3. Connect the P50 line (connector 1118-5) to ground.
4. Check again the µP P50 input (µP pin 20): <0V3.

10. Current mode power supply 20PS203

10.1 Blockdiagram

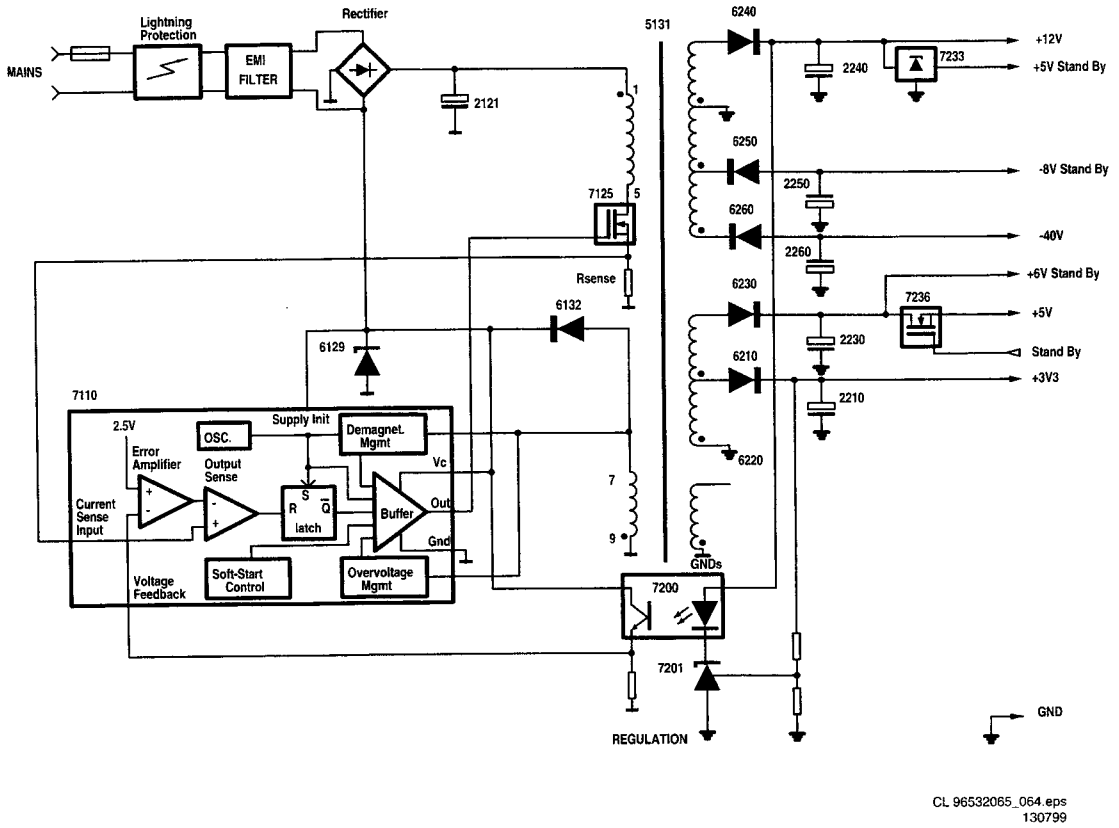


Figure 10-1

10.1.1 Function description of the current mode power supply

MOSFET 7125 is used as a power switch controlled by the controller IC 7110. When the switch is closed, energy is transferred from the mains into the transformer. This energy is then supplied to the load when the switch is opened. By control of the switched-on time, the energy transferred in each cycle is regulated so that the output voltages are independent of load or input voltage variations. The controlling device MC44603P is an integrated pulse width modulator. A clock signal initiates power pulses at a fixed frequency. The termination of each output pulse occurs when an analogue of the inductor current reaches a threshold established by the error signal. In this way the error signal actually controls the peak inductor current on cycle-by-cycle basis.

10.2 General description of MC44603

The MC44603 is an enhanced high performance controller that is specifically designed for Off-line and dc-to dc converter applications. This device has the unique ability of automatically changing operating modes if the converter output is overloaded., unloaded, or shorted. The MC44603 has several distinguishing features when compared to conventional SMPS controllers. These features consist of a foldback facility for overload protection, a standby mode when the converter output is slightly loaded, a demagnetisation detection for reduced switching stresses on transistor and diodes, and a high current totem pole output ideally suited for driving a power MOSFET. It can also be used for driving a bipolar transistor in low power converters. It is optimised to operate in discontinuous mode but can also operate in continuous mode. Its advanced design allows use in current mode or voltage mode control applications.

10.3 Pin connections

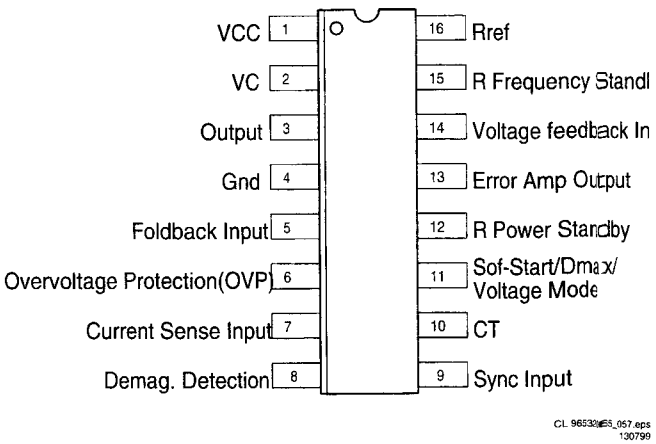


Figure 10-2

10.4 Blockdiagram of MC44603

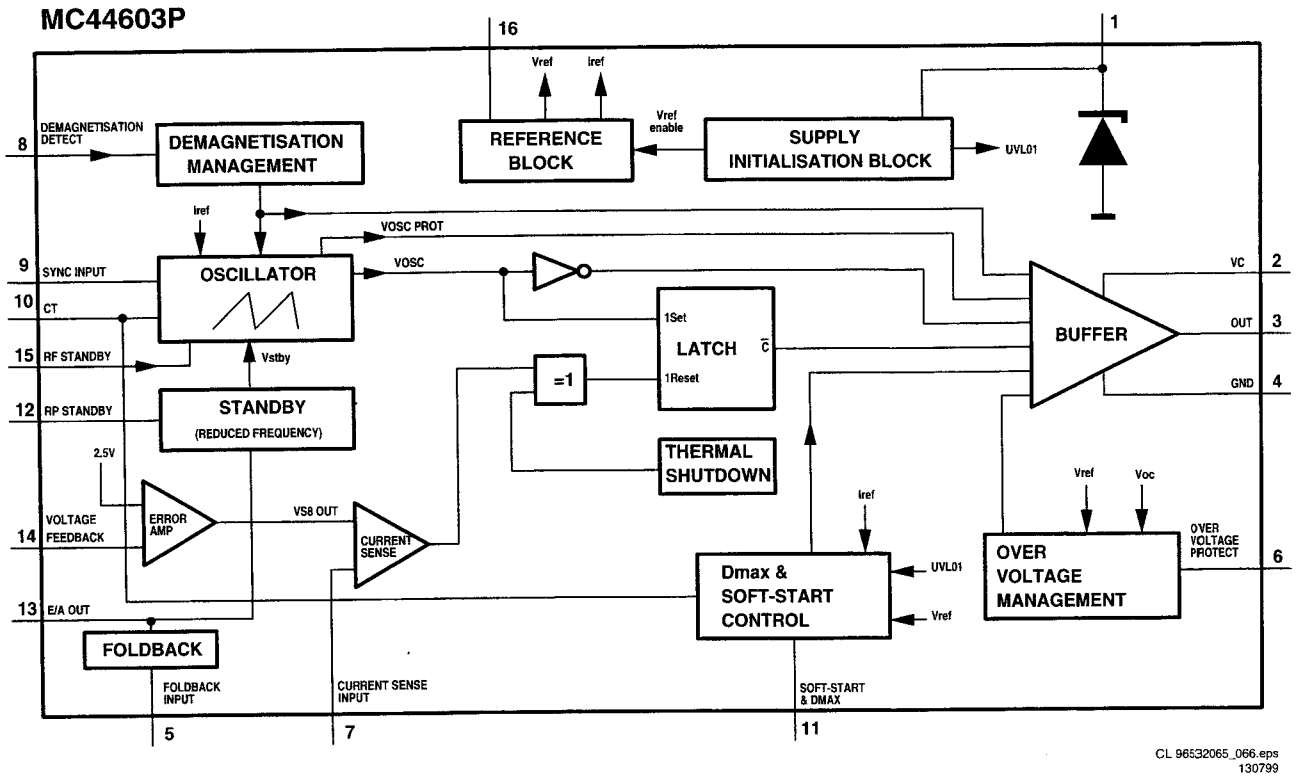


Figure 10-3

10.5 Pin function description

Pin function description

Pin	Name	Description
1	VCC	This pin is the positive supply of the IC. The operating voltage range after start-up is 9.0 to 14.5 V.
2	VC	The output high state (VOH) is set by the voltage applied to this pin.
3	Output	Peak currents up to 750 mA can be sourced or sunk, suitable for driving either MOSFET or Bipolar transistors.
4	Gnd	The groundpin is a single return, typically connected back to the power source.
5	Foldback Input	The foldback function provides overload protection.
6	Overvoltage Protection	When the overvoltage protection pin receives a voltage greater than 2.5V, the device is disabled and requires a complete restart sequence.
7	Current Sense Input	A voltage proportional to the current flowing into the power switch is connected to this input.
8	Demagnetisation Detection	A voltage delivered by an auxiliary transformer winding provides to the demagnetisation pin an indication of the magnetisation state of the flyback transformer. A zero voltage detection corresponds to complete core saturation.
9	Synchronisation Input	The synchronisation input pin can be activated with either a negative pulse going from a level between 0.7V and 3.7V to Gnd or a positive pulse going from a level between 0.7V and 3.7V up to a level higher than 3.7V. The oscillator runs free when Pin 9 is connected to Gnd.
10	C_T	The normal mode oscillator frequency is programmed by the capacitor CT choice together with the Rref resistance value. CT, connected between Pin 10 and Gnd, generates the oscillator sawtooth.
11	Soft-Start/Dmax/Voltage-Mode	A capacitor, resistor or a voltage source connected to this pin limits the switching duty-cycle. This pin can be used as a voltage mode control input. By connecting Pin 11 to Ground, the MC44603 can be shut down.
12	RP Standby	A voltage level applied to the RP Standby pin determines the output power level at which the oscillator will turn into the reduced frequency mode of operation(i.e. standby mode). An internal hysteresis comparator allows to return in the normal mode at a higher output power level.
13	E/A Out	The error amplifier output is made available for loop compensation.
14	Voltage Feedback	This is the inverting input of the Error Amplifier. It can be connected to the switching power supply output through an optical (or other) feedback loop.
15	RF Standby	The reduced frequency or standby frequency programming is made by the RF Standby resistance choice.
16	Rref	Rref sets the internal reference current. The internal reference current ranges from 100µA to 500µA. This requires that 5.0kΩ ≤ Rref ≤ 25kΩ.

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130799

Figure 10-4

10.6 Operating description

The input voltage Vcc(pin 1) is monitored by a comparator with hysteresis, enabling the circuit at 14.5V and disabling the circuit below 7.5V. The error amplifier compares a voltage Vfb(pin 14) related to the output voltage of the power supply, with an internal 2.5V reference. The current sense comparator compares the output of the error amplifier with the switch current Isense(pin 7) of the power supply. The output of the current sense comparator resets a latch, which is set every cycle by the oscillator. The output stage is a totem pole, capable of driving a MOSFET directly.

10.6.1 Start-up sequence

t1: Charging the capacitor at Vcc
C2129 will be charged via R3123 and R3134, C2133 and C2111 via R3129. The output is switched off during t1.

t2: Charging of output capacitors
When the input voltage of the IC exceeds 14.5V, the circuit is enabled and starts to produce output pulses. The current consumption of the circuit increases to about 17mA, depending on the external loads of the IC. At first, the capacitor at the Vcc pin will discharge because the primary auxiliary voltage, coming from winding 7-9 is below the Vcc voltage. At some moment during t2, the primary auxiliary voltage reaches the same level as Vcc. The Vcc voltage is now determinated by this primary auxiliary voltage.

t3: regulation
The output voltage of the power supply is in regulation

t4: overload
When the output is shortened, the supply voltage of the circuit will decrease and after some time drop below the lower threshold voltage. At that moment, the output will be disabled and the process of charging the Vcc capacitor starts again. If the output is still shorted at the next t2 phase, the complete start-and stop sequence will repeat. The power supply comes in a hiccup mode

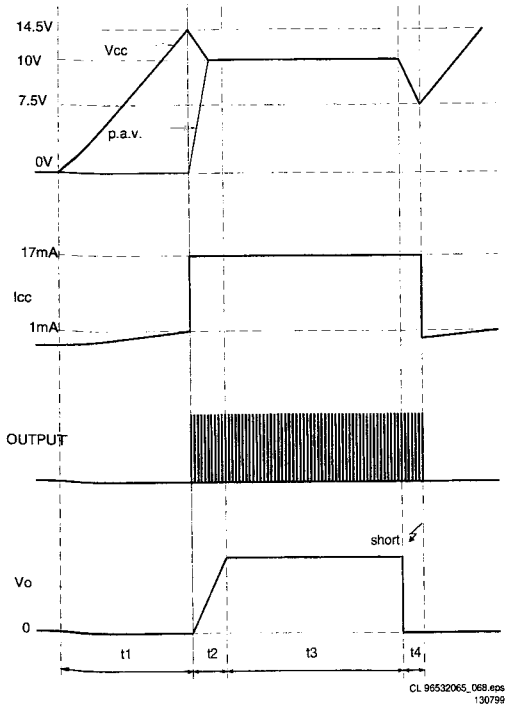


Figure 10-5 Start-up sequence

10.7 Regulation

Figure B shows the most relevant signals during the regulation phase of the power supply.
The oscillator voltage ramps up and down between V1 and V2. The voltage at the current sense terminal is compared every cycle with the output of the error amplifier Vcomp. The output is switched off when the current sense level exceeds the level at the output of the error amplifier.

1. TimeON phase : A drain current will flow from the positive supply at pin 1 of the transformer through the transformer's primary winding, the MOSFET and Rsense to ground. As the positive voltage at pin 1 of the transformer is constant, the current will increase linearly and create a ramp dependent on the mains voltage and the inductance of the primary winding. A certain amount of energy is stored in the transformer in the form of a magnetic field. The polarity of the voltages at the secundary windings is such that the diodes are non-conducting.
2. TimeDIODE phase : When the MOSFET is switched off, energy is no longer supplied to the tranformer. The inductance of the tranformer now tries to maintain the current which has been flowing through it at a constant level. The polarity of the voltage from the transformer therefore becomes reversed. This results in a current flow through the tranformer's secondary winding via the diodes, electrolytic capacitors and the load. This current is also ramp shaped but decreasing.
3. TimeDEAD phase : when the stored energy has been supplied to the load, the current in the secondary windings stops flowing. At this point the drain voltage of the MOSFET will drop to the voltage of C2121 with a ringing caused by the Drain-Source capacitance with the primary inductance.

The oscillator will start a next cyclus which consists of the described three phases. The time of the different phases depends on the mains voltage and the load.
TimeDEAD is maximum at an input of 400VDC and minimum load, it will be zero at an input of 100VDC and overload.

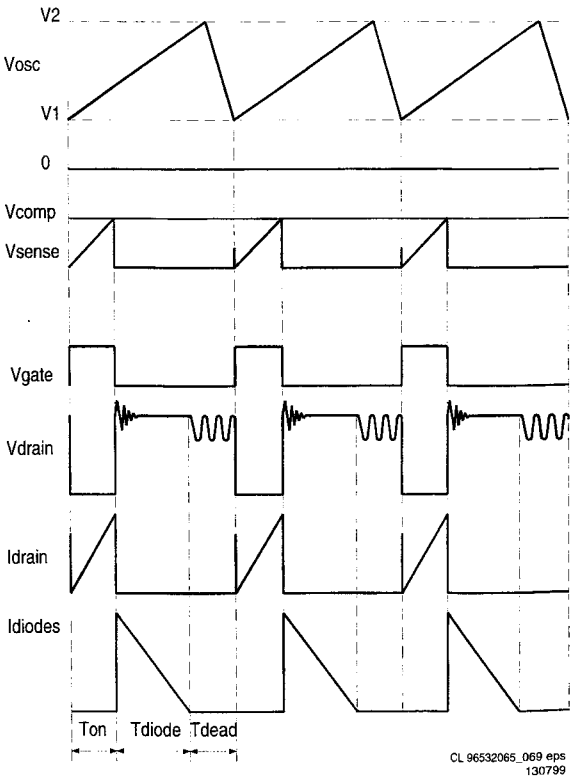
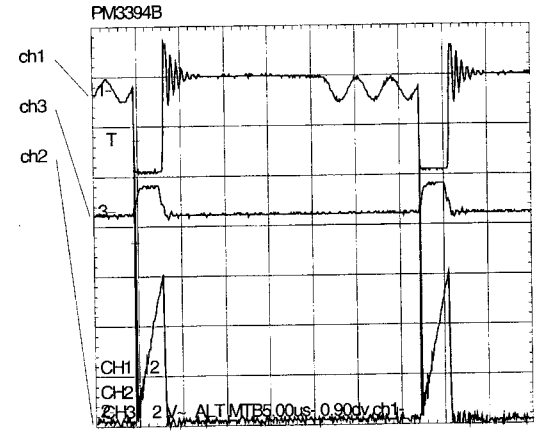
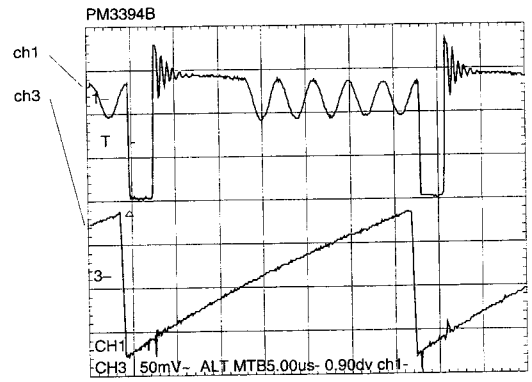


Figure 10-6 Regulation

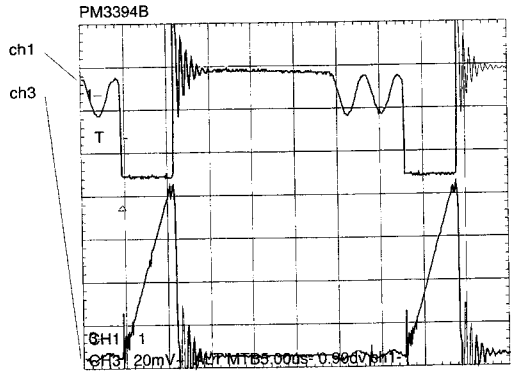
10.8 Oscillograms



ch1 : Drain voltage
ch2 : Drain current
ch3 : Gate voltage



ch1 : Drain voltage
ch2 : Oscillator voltage



ch1 : Drain voltage
ch3 : Sense voltage

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Figure 10-7

11. Circuit descriptions and abbreviations

11.1 Input circuit

The input circuit consists of a lightning protection circuit and an EMI filter.
The lightning protection comprises R3120, gasarrestor 1125 and R3124. The EMI filter is formed by C2120, L5120, C2125 and C2126. It prevents inflow of noises into the mains.

11.2 Primary rectifier/smoothing circuit

The AC input is rectified by rectifier bridge 6120 and smoothed into C2121. The voltage over C2121 is approximately 300V. It can vary from 100V to 390V.

11.3 Start circuit and Vcc supply

This circuit is formed by R3123, R3134, C2129, D6129, R3129, R3111, C2133 and C2111.
When the power plug is connected to the mains voltage, the stabilised voltage over D6129(24V) will charge C2133 via R3129. When the voltage reaches 14.5V across C2111, the control circuit of IC7110 is turned on and the regulation starts. During regulation, Vcc of IC7110 will be supplied by the rectified voltage from winding 7-9 via R3135, D6132 and C2133.

11.4 Control circuit

The control circuit exists of IC7110, C2102, 2104, 2107, 2109, 2110, R3102, 3103, 3104, 3107, 3108, 3109 and 3110. The frequency of the oscillator is defined by C2102 and R3110.
Power switch circuit
This circuit comprises MOSFET 7125, Rsense 3126, 3127 and 3128, R3125 , C2127, L5125, R3112 and R3113. R3125 is a pull-down resistor to remove static charges from the gate of the MOSFET.

11.5 Regulation circuit

The regulation circuit comprises opto-coupler 7200 which isolates the error signal from the control IC on the primary side and a reference component 7201. The TL431(7201) can be represented by two components:

- a very stable and accurate reference diode
- a high gain amplifier

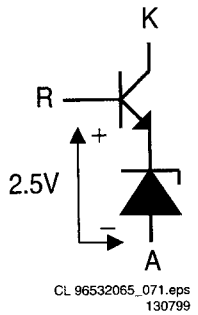

Figure 11-1

TL431 will conduct from cathode to anode when the reference is higher than the internal reference voltage of about 2.5V. If the reference voltage is lower, the cathode current is almost zero.

The cathode current flows through the LED of the opto-coupler. The collector current of the opto-coupler flows through R3106, producing an error voltage, connected to voltage feedback pin 14 of IC7110.

11.6 Demagnetisation

The auxiliary winding (7-9) voltage is used to detect magnetic saturation of the transformer core and connected via R3101 to pin 8 of IC7110. During the demagnetisation phase, the output will be disabled.

11.7 Overvoltage protection circuit

This circuit consist of D6114, C2114, R3115 and R3116.
When the regulation circuit is interrupted due to an error in the control loop, the regulated output voltage will increase (overvoltage). This overvoltage is sensed on the primary winding 7-9.
When an overvoltage longer than 2.0 (s is detected, the output is disabled until VCC is removed and then re-applied. The power supply will come in a hiccup mode as long as the error in the control loop is present.

11.8 Secondary rectifier/smoothing circuit

There are 5 rectifier/smoothing circuits on the secondary side. Each voltage depends on the number of windings of the transformer.
The +5Vstby power supply is derived from the +12Vstby by voltage regulator 7233, C2233 and L5233.
The -5V voltage is regulated by voltage regulator 7259 and will be switched off via D6256, T7256 and T7255 during standby (control signal STAND BY is high). When jumper 4250 is mounted instead of this circuit, a supply voltage -8Vstby will be present at pin 9 of connector 0205. -5V is used in DVD730 MK II, DVD 930 MK II and DVD710. -8Vstby is used in DVD750 and DVD950.
The +5V power supply is derived from +6Vstby by the loader-up circuit formed by MOSFET 7236, reference component 7237, R3236, R3237 and C2239. This voltage will be switched off during STAND BY via T7235.
The 3V3 power supply is regulated by the control loop (7201, 7200, 7110) of the switched mode PSU.

11.9 List of abbreviations

B	Buffered Video input Blue from DVD monoboard
BC_AUX	Blue or Chroma input from AUX-scart
BC_TV	Blue or Chroma output to TV-scart
C_ENC	Buffered Chroma input from DVD monoboard
CVBS	Buffered Composite video input from DVD monoboard
DC_OFF	Control signal to switch off û8Vstby and +12Vstby during standby
DIG_OUT	Digital out
FBIN_AUX	Fast blanking input from AUX-scart
FBOUT_TV	Fast blanking output to TV-scart
G	Buffered Video input Green from DVD monoboard
GIN_AUX	Video input Green from AUX-scart
GOUT_TV	Video output Green to TV-scart
HP_L	Audio output left to headphone and audio scart switch TEA6420
HP_R	Audio output right to headphone and audio scart switch TEA6420
KILL	Kill control signal for audio outputs and for soft mute of DAC
LIN_AUX	Audio input left from AUX-scart
LIN_TV	Audio input left from TV-scart
LOUT_AUX	Audio output left to AUX-scart
LOUT_TV	Audio output left to TV-scart
LRCLK	Left/Right clock
PCM_CLK	Audio system clock for DAC
PCM_OUT0	Audio serial output data
R	Buffered Video input Red from DVD monoboard
RCIN_TV	Red or Chroma input from TV-scart
RCOUT_TV	Red or Chroma output to TV-scart
RIN_AUX	Audio input right from AUX-scart
RIN_TV	Audio input right from TV-scart
ROUT_AUX	Audio output right to AUX-scart
ROUT_TV	Audio output right to TV-scart
SCL	I2C bus clock
SCLK	Audio serial bit clock
SDA	I2C bus data
SELECT	Control signal for video scart switches; high = TV ,low = AUX
SELECT_HIGH	Control signal for switching fast blanking and slow blanking signals; high = TV,.low = AUX
SLB_AUX	Slow blanking control signal from AUX-scart
SLB_TV	Slow blanking control signal to TV-scart
STANDBY	Control signal from STI5505 used to swith off û8Vstby and +12Vstby during standby.
STEREO_L	Audio cinch output left
STEREO_R	Audio cinch output right
Y_ENC	Buffered Luma input from DVD monoboard
YCVBSIN_AUX	Luma or CVBS input from AUX-scart
YCVBSIN_TV	Luma or CVBS input from TV-scart
YCVBSOUT_AUX	Luma or CVBS output to AUX-scart
YCVBSOUT_TV	Luma or CVBS output to TV-scart
0/6/12	Scart switch control signal A/V board. 0V : loop through (AUX to TV), 6V : play 16:9 format, 12V : play 4:3 format

12. Spare parts list DVD711 /001

Various

Various

0381	2422 076 00304	CABLE CINCH/CINCH 1M5 YE/RD/WH
0382	4822 321 61847	SCART
0384	3139 228 82060	IRT ASSY RC283201/01 PACKED
0385▲	4822 321 10249	SBC1201 MAINS CABLE
0454	3104 126 20540	PE-SHEET 720X550 POLYETHYLEEN

Mechanical

Various

0200	3139 247 50790	CAB FRONT DVD711/17X PNT PRT
0201	4822 459 10887	
0202	3139 240 00030	DVD LOGO DVD711
0203	3139 244 00160	LIGHT CONDUCTOR DVD950
0204	3139 247 50900	WINDOW DVD711/17X PNT PRT
0219	3139 247 50930	DOOR DVD711/17X PNT PRT
0220	3139 241 20110	DOOR SPRING
0232	3139 247 50340	COVER TOP
0240	3139 247 50870	BTN CONTROL DVD711/ 17X PNT PRT
0242	3139 247 51080	RING DVD711 ML PNT PRT
0244	3139 247 50750	FOOT ASSY DVD711
0245	3139 247 50750	FOOT ASSY DVD711
1002	3104 128 06120	A/V PB ASSY 4248 DVD750
1014	3139 110 34220	FFC FOIL 22P/105/22P BD B
1018	3139 110 34230	FFC FOIL 16P/105/16P BD B

Front PCB

Various

0002	3139 244 00440	FTD HOLDER DVD711
1100	4822 276 13775	SWITCH
1101	4822 276 13775	SWITCH
1102	4822 276 13775	SWITCH
1106	4822 276 13775	SWITCH
1107	4822 276 13775	SWITCH
1108	4822 276 13775	SWITCH
1109	4822 276 13775	SWITCH
1110	2422 540 98423	RES CER 8MHz CSTS*MHz 03
1111	4822 276 13775	SWITCH
1113	2722 171 07172	VFD 14-MT-27GNK 135*29 (FTB0)B

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2100	4822 122 33575	220pF 5% 63V CASE
2101	4822 122 33575	220pF 5% 63V CASE
2102	5322 122 32531	100pF 5% 50V
2103	5322 122 32531	100pF 5% 50V
2105	4822 126 12105	50V 33nF PM5
2106	4822 124 40248	10µF 20% 63V
2107	4822 126 12105	50V 33nF PM5
2108	4822 126 12105	50V 33nF PM5
2109	4822 126 12105	50V 33nF PM5
2110	4822 126 12105	50V 33nF PM5
2111	4822 126 12105	50V 33nF PM5
2114	5322 122 32658	22pF 5% 50V
2115	5322 122 32658	22pF 5% 50V
2116	4822 126 12105	50V 33nF PM5
2117	4822 124 40248	10µF 20% 63V
2122	4822 126 12105	50V 33nF PM5
2123	4822 124 11947	10µF 20% 16V
2124	3198 028 42290	EL 5MM 35V 22µF PM20 COL A
2125	5322 122 32658	22pF 5% 50V
2126	4822 124 40248	10µF 20% 63V
2128	5322 122 31647	1nF 10% 63V
2129	3198 028 42290	EL 5MM 35V 22µF PM20 COL A
2130	3198 028 42290	EL 5MM 35V 22µF PM20 COL A
2201	4822 126 12105	50V 33nF PM5
2211	5322 122 32531	100pF 5% 50V

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3100	4822 051 20223	22k 5% 0.1W
3101	4822 051 20273	27k 5% 0.1W
3102	4822 117 10834	47k 1% 0.1W
3103	4822 117 11149	82k 1% 0.1W
3104	4822 117 10837	100k 1% 0.1W
3105	4822 051 20008	0Ω jumper . (0805)
3106	4822 117 11503	220Ω 1% 0.1W
3107	4822 051 20008	0Ω jumper . (0805)
3108	4822 117 11149	82k 1% 0.1W
3109	4822 051 20472	4k7 5% 0.1W
3110	4822 051 20472	4k7 5% 0.1W
3111	4822 051 20472	4k7 5% 0.1W
3112	4822 051 20472	4k7 5% 0.1W
3113	4822 051 20472	4k7 5% 0.1W
3114	4822 051 20109	10Ω 5% 0.1W
3115	4822 051 20472	4k7 5% 0.1W
3116	4822 117 11149	82k 1% 0.1W
3117	4822 117 11152	4Ω7 5%
3118	4822 117 10833	10k 1% 0.1W
3119	4822 117 10833	10k 1% 0.1W
3120	4822 051 20471	470Ω 5% 0.1W
3121	4822 051 20472	4k7 5% 0.1W
3122	4822 051 20109	10Ω 5% 0.1W
3123	4822 117 10833	10k 1% 0.1W
3125	4822 051 20109	10Ω 5% 0.1W
3130	4822 051 20109	10Ω 5% 0.1W
3131	4822 117 11152	4Ω7 5%
3132	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3133	4822 051 20109	10Ω 5% 0.1W
3134	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3135	4822 117 11503	220Ω 1% 0.1W
3136	4822 051 10102	1k 2% 0.25W
3137	4822 117 10833	10k 1% 0.1W
3138	4822 051 20471	470Ω 5% 0.1W
3139	4822 051 20472	4k7 5% 0.1W
3140	4822 117 10833	10k 1% 0.1W
3142	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3143	4822 117 10833	10k 1% 0.1W
3144	4822 117 10837	100k 1% 0.1W
3145	4822 117 10833	10k 1% 0.1W
3151	4822 051 20101	100Ω 5% 0.1W

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6100	4822 130 83757	BAS216
6101	4822 130 11666	BZX284-C8V2
6102	4822 130 10794	BZX284-C10
6104	4822 130 83757	BAS216
6200	4822 130 82978	LTL-16KPE-P

7100	4822 130 60511	BC847B
7101	4822 130 60511	BC847B
7102	4822 130 60511	BC847B
7103	4822 130 60511	BC847B
7104	3104 123 94530	IC ROM SLAVE DVD950
7105	4822 130 40855	BC337
7106	4822 130 40854	BC327
7107	4822 130 60511	BC847B
7108	4822 130 60511	BC847B
7109	4822 130 60373	BC856B
7110	4822 212 30842	TSOP1736SB1
7112	4822 209 31257	MC79L24ACP

PSU 20PS223

Various

0025	4822 492 63524	FIX. TRANSISTOR
0101▲	4822 265 31015	
0120	4822 265 11253	FUSE HOLDER 2P
1120▲	4822 253 30383	19181 (2,5A)

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2120▲	4822 121 10512	275V 220nF 20%
2121	8211 248 53120	C CHM YK 68M 400VM RUBYCOnF
2122	4822 121 70141	33nF 5% 400V
2127	4822 122 50116	470pF 10% 1KV
2130▲	4822 126 14572	100pF 10% 250V
2131▲	4822 126 14133	1nF 20% 250V
2133	4822 124 40248	10µF 20% 63V
2134	2020 012 93111	EL YK 35V S 47µF PM20 A
2141	4822 124 22652	2.2µF 20% 50V
2143	4822 126 14585	100nF 10% 50V
2145	5322 126 10223	4.7nF 10% 63V
2146	4822 126 14585	100nF 10% 50V
2150	4822 126 14585	100nF 10% 50V
2156	5322 122 31863	63V 330pF PM5
2157	5322 122 32268	470pF 10% 50V
2202	4822 126 13838	100nF 50V 20%
2210	2020 012 93728	EL YK 10V S 2200µF PM20 B
2230	4822 124 22779	1000µF 10V
2232	4822 124 81021	100µF 20% 16V
2233	4822 124 81021	100µF 20% 16V
2234	4822 126 12105	50V 33nF PM5
2238	4822 124 81021	100µF 20% 16V
2239	4822 124 81021	100µF 20% 16V
2240	4822 124 81147	470µF 20% YK 25V
2250	4822 124 41545	220µF 20% 16V
2260	4822 124 81151	22µF 50V

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3105	4822 053 21684	680k 5% 0.5W
3111	4822 116 52186	22Ω 5% 0.5W
3120▲	4822 116 21217	1M A/423V 800V
3121	4822 117 12181	470Ω 20% 0.5W
3123	4822 116 83882	39k 5% 0.5W
3125	4822 117 10833	10k 1% 0.1W
3126	4822 050 24708	4Ω7 1% 0.6W
3127	4822 116 80176	1Ω 5% 0.5W
3128	4822 116 80176	1Ω 5% 0.5W
3129	4822 116 83882	39k 5% 0.5W
3134	4822 116 83882	39k 5% 0.5W
3135	4822 053 11159	15Ω 5% 2W
3139	4822 051 20479	47Ω 5% 0.1W
3140	4822 116 52191	33Ω 5% 0.5W
3141	4822 117 10833	10k 1% 0.1W
3143	4822 117 10834	47k 1% 0.1W
3145	4822 116 83933	15k 1% 0.1W
3146	4822 117 11148	56k 1% 0.1W
3150	4822 117 11139	1k5 1% 0.1W
3153	4822 116 83933	15k 1% 0.1W
3154	4822 051 10102	1k 2% 0.25W
3155	4822 116 52219	330Ω 5% 0.5W
3156	4822 051 20339	33Ω 5% 0.1W
3201	4822 116 52176	10Ω 5% 0.5W
3202	4822 117 11141	1k8 1% 0.1W
3204	4822 117 11504	270Ω 1% 0.1W
3205	4822 117 11145	4k7 1% 0.1W
3206	4822 051 20008	0Ω jumper . (0805)
3207	4822 051 10102	1k 2% 0.25W
3233	4822 050 11002	1k 1% 0.4W
3234	4822 051 10102	1k 2% 0.25W
3235	4822 116 83933	15k 1% 0.1W
3236	4822 051 20472	4k7 5% 0.1W
3237	4822 117 11145	4k7 1% 0.1W
3260	4822 051 20102	1k 5% 0.1W
3262	4822 116 83872	220Ω 5% 0.5W
4xxx	4822 051 10008	0Ω 5% 0.25W (1206)
4xxx	4822 051 20008	0Ω 5% 0.25W (0805)

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5120▲	4822 157 11846	
5125	4822 157 11411	100mH z
5131▲	4822 146 10402	TRAFO CT395FANF/P VF
5210	4822 157 11722	6.8µH 20% 7.7X9.5
5223	4822 157 50963	2.2µH
5231	4822 157 11722	6.8µH 20% 7.7X9.5
5240	4822 157 51195	1 µH 20% 4X9.8MM AXIAL
5260	4822 157 11517	10µH 5% 2.3X3.4

→|←

6110	5322 130 34574	1N4004G
6111	5322 130 34574	1N4004G
6120	4822 130 83707	SINB80
6122	4822 130 34281	BZX79-B15
6123	4822 130 34281	BZX79-B15
6132	4822 130 42488	BYD33D
6133	4822 130 83649	1SS355
6140	4822 130 30621	1N4148
6141	4822 130 11152	UDZ18B
6150	4822 130 11148	UDZ4.7B
6210	4822 130 11584	BYW98-200-C1
6230	4822 130 11584	BYW98-200-C1
6241	4822 130 11584	BYW98-200-C1
6250	4822 130 42606	BYD33J
6261	4822 130 42606	BYD33J

7125	4822 130 11417	STP3NB60FP
7131▲	4822 130 91451	CQY80NG
7141	4822 130 44568	BC557B
7145	9322 145 88682	UC3842A
7150	4822 130 40959	BC547B
7201	4822 209 81397	TL431CLPST
7233	5322 209 86445	LM7805CT
7235	4822 130 42705	BC847
7236	4822 130 11578	STP16NE06
7237	4822 209 81397	TL431CLPST

Loader

Various

0001	9305 023 61001	VAL3000

AV PCB

Various

1300	4822 265 11154	52030-2210 (22P)
1301	4822 265 11103	52030-1610 (16P)
1303	4822 267 10994	4P, MDIN
1304	2422 033 00334	CON BM EURO H 42P F BK GRND-L
1402	4822 265 11566	3P YKC21-3930
1405	4822 267 31729	

⊣|⊢

2032	4822 126 13482	470nF 80/20% 16V
2353	4822 124 40769	4.7µF 20% 100V
2354	4822 126 14076	220nF 25V. P8020
2355	4822 124 40769	4.7µF 20% 100V
2357	4822 124 40769	4.7µF 20% 100V
2358	4822 122 33575	220pF 5% 63V CASE
2359	4822 124 40769	4.7µF 20% 100V
2360	4822 126 13692	47pF 1% 63V
2361	4822 126 13692	47pF 1% 63V
2371	4822 122 33575	220pF 5% 63V CASE
2372	4822 124 40769	4.7µF 20% 100V
2373	4822 124 40769	4.7µF 20% 100V
2377	4822 122 33575	220pF 5% 63V CASE
2378	4822 124 40769	4.7µF 20% 100V
2382	4822 124 40769	4.7µF 20% 100V
2383	4822 124 40769	4.7µF 20% 100V
2384	4822 051 20008	0R00 JUMP. ()
2385	4822 124 40769	4.7µF 20% 100V
2395	4822 122 33575	220pF 5% 63V CASE
2402	4822 122 33575	220pF 5% 63V CASE
2404	4822 122 33575	220pF 5% 63V CASE
2408	4822 122 33575	220pF 5% 63V CASE
2409	4822 122 33575	220pF 5% 63V CASE
2412	4822 124 40433	47µF 20% 25V
2450	5322 122 32654	22nF 10% 63V
2452	4822 126 14076	220nF 25V. P8020
2453	4822 124 40433	47µF 20% 25V
2455	5322 122 32531	100pF 5% 50V
2456	4822 124 22339	100UE 16V
2457	5322 126 10511	1nF 5% 50V
2458	5322 122 32654	22nF 10% 63V
2459	5322 122 32531	100pF 5% 50V
2460	5322 122 32654	22nF 10% 63V
2461	5322 122 32531	100pF 5% 50V
2462	4822 124 22339	100UE 16V
2463	5322 126 10511	1nF 5% 50V
2464	5322 122 32531	100pF 5% 50V
2469	5322 122 32654	22nF 10% 63V
2471	4822 126 14585	100nF 10% 50V
2472	4822 124 40433	47µF 20% 25V
2488	4822 126 14585	100nF 10% 50V
2495	4822 126 14585	100nF 10% 50V
2496	5322 122 32654	22nF 10% 63V
2497	4822 124 81151	22µF 50V
2498	4822 124 41584	100µF 20% 10V
2499	4822 122 33575	220pF 5% 63V CASE
2500	4822 122 33575	220pF 5% 63V CASE
2501	4822 122 33575	220pF 5% 63V CASE
2502	4822 122 33575	220pF 5% 63V CASE
2503	4822 122 33575	220pF 5% 63V CASE
2504	4822 122 33575	220pF 5% 63V CASE
2505	4822 122 33575	220pF 5% 63V CASE
2506	4822 124 40763	2.2µF 100 V
2507	4822 124 40763	2.2µF 100 V
2508	4822 124 40763	2.2µF 100 V
2509	4822 124 40763	2.2µF 100 V
2511	4822 124 40763	2.2µF 100 V
2520	4822 122 33575	220pF 5% 63V CASE
2521	4822 122 33575	220pF 5% 63V CASE
2522	4822 122 33575	220pF 5% 63V CASE
2523	4822 122 33575	220pF 5% 63V CASE
2524	4822 051 20008	0R00 JUMP. ()
2525	4822 051 20008	0R00 JUMP. ()
2527	5322 122 32654	22nF 10% 63V
2528	5322 122 32654	22nF 10% 63V
2529	5322 122 32654	22nF 10% 63V
2530	5322 122 32654	22nF 10% 63V
2531	5322 122 32654	22nF 10% 63V
2532	5322 122 32654	22nF 10% 63V
2533	5322 122 32654	22nF 10% 63V
2534	5322 122 32654	22nF 10% 63V
2535	5322 122 32654	22nF 10% 63V
2536	5322 122 32654	22nF 10% 63V
2537	5322 122 32654	22nF 10% 63V
2538	4822 124 40763	2.2µF 100 V
2539	4822 124 40763	2.2µF 100 V
2540	4822 124 40763	2.2µF 100 V
2541	4822 126 14585	100nF 10% 50V
2542	4822 126 14491	2.2µF 10V
2543	4822 126 13692	47pF 1% 63V
2544	4822 124 40248	10µF 20% 63V
2545	4822 124 40433	47µF 20% 25V

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3036	4822 117 11449	2k2 5% 0.1W 0805
3038	4822 051 20223	22k 5% 0.1W
3039	4822 117 10834	47k 1% 0.1W
3040	4822 051 20273	27k 5% 0.1W
3041	4822 051 20822	8k2 5% 0.1W
3043	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3044	4822 051 20223	22k 5% 0.1W
3045	4822 051 20101	100Ω 5% 0.1W
3046	4822 051 20101	100Ω 5% 0.1W
3049	4822 117 11927	75Ω 1% 0.1W
3050	4822 117 11503	220Ω 1% 0.1W
3056	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3058	4822 051 20101	100Ω 5% 0.1W
3059	4822 051 20101	100Ω 5% 0.1W
3062	4822 117 11927	75Ω 1% 0.1W
3063	4822 051 10102	1k 2% 0.25W
3300	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3301	4822 051 20101	100Ω 5% 0.1W
3313	4822 117 11503	220Ω 1% 0.1W
3314	4822 051 10102	1k 2% 0.25W
3315	4822 051 20471	470Ω 5% 0.1W
3316	4822 117 10834	47k 1% 0.1W
3318	4822 117 10834	47k 1% 0.1W
3319	4822 051 10102	1k 2% 0.25W
3320	4822 117 10834	47k 1% 0.1W
3321	4822 051 20101	100Ω 5% 0.1W
3322	4822 051 20101	100Ω 5% 0.1W
3323	4822 051 20471	470Ω 5% 0.1W
3325	4822 117 10834	47k 1% 0.1W
3339	4822 051 10102	1k 2% 0.25W
3340	4822 051 10102	1k 2% 0.25W
3343	4822 117 11927	75Ω 1% 0.1W
3345	4822 117 11927	75Ω 1% 0.1W
3347	4822 051 10102	1k 2% 0.25W
3348	4822 051 10102	1k 2% 0.25W
3349	4822 117 10834	47k 1% 0.1W
3351	4822 051 20471	470Ω 5% 0.1W
3359	4822 117 10834	47k 1% 0.1W
3363	4822 051 10102	1k 2% 0.25W
3366	4822 117 10834	47k 1% 0.1W
3394	4822 051 20471	470Ω 5% 0.1W
3397	4822 117 10834	47k 1% 0.1W
3407	4822 117 11927	75Ω 1% 0.1W
3408	4822 117 11927	75Ω 1% 0.1W
3409	4822 117 11503	220Ω 1% 0.1W
3413	4822 117 10834	47k 1% 0.1W
3425	4822 117 11927	75Ω 1% 0.1W
3432	4822 117 11927	75Ω 1% 0.1W
3433	4822 051 20008	0Ω jumper . (0805)
3442	4822 051 20101	100Ω 5% 0.1W
3444	4822 117 10833	10k 1% 0.1W
3445	4822 117 10833	10k 1% 0.1W
3446	4822 117 12955	2k7 1% 0.1W 0805
3447	4822 117 12955	2k7 1% 0.1W 0805
3448	4822 117 10833	10k 1% 0.1W
3451	4822 117 10833	10k 1% 0.1W
3453	4822 117 10833	10k 1% 0.1W
3454	4822 117 10833	10k 1% 0.1W
3455	4822 117 10833	10k 1% 0.1W
3457	4822 051 20101	100Ω 5% 0.1W
3459	4822 117 10833	10k 1% 0.1W
3461	4822 117 10833	10k 1% 0.1W
3462	4822 117 12955	2k7 1% 0.1W 0805
3463	4822 117 12955	2k7 1% 0.1W 0805
3464	4822 117 10833	10k 1% 0.1W
3505	4822 051 20101	100Ω 5% 0.1W
3507	4822 051 20101	100Ω 5% 0.1W
3508	4822 117 12521	68Ω 1% 0.1W
3511	4822 117 10833	10k 1% 0.1W
3512	4822 117 10833	10k 1% 0.1W
3517	4822 051 20101	100Ω 5% 0.1W
3519	4822 051 20562	5k6 5% 0.1W 0805
3610	4822 051 20472	4k7 5% 0.1W
3611	4822 051 20472	4k7 5% 0.1W
3612	4822 117 10834	47k 1% 0.1W
3613	4822 117 12955	2k7 1% 0.1W 0805
3614	4822 051 20223	22k 5% 0.1W
3615	4822 117 11152	4Ω7 5%
3616	4822 051 20472	4k7 5% 0.1W
3617	4822 117 10833	10k 1% 0.1W
3618	4822 051 10102	1k 2% 0.25W
3619	4822 117 10833	10k 1% 0.1W
3620	4822 051 10008	0Ω 5% 0.25W
3621	4822 051 20472	4k7 5% 0.1W
3622	4822 117 10833	10k 1% 0.1W
3623	4822 051 20472	4k7 5% 0.1W
3624	4822 117 10833	10k 1% 0.1W
3625	4822 051 10102	1k 2% 0.25W
3629	4822 117 11927	75Ω 1% 0.1W
3632	4822 051 20101	100Ω 5% 0.1W
3634	4822 117 11449	2k2 5% 0.1W 0805
3635	4822 117 11503	220Ω 1% 0.1W
3636	4822 117 10837	100k 1% 0.1W
3637	4822 117 10837	100k 1% 0.1W
3638	4822 117 10837	100k 1% 0.1W
3639	4822 117 10837	100k 1% 0.1W
3640	4822 117 10837	100k 1% 0.1W
3641	4822 117 10837	100k 1% 0.1W
3642	4822 117 10837	100k 1% 0.1W
3643	4822 117 10837	100k 1% 0.1W
3646	4822 117 10837	100k 1% 0.1W
3647	4822 117 10837	100k 1% 0.1W
3648	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3649	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3650	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3651	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3653	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3672	4822 117 11927	75Ω 1% 0.1W
3673	4822 117 11927	75Ω 1% 0.1W
3674	4822 117 11927	75Ω 1% 0.1W
3675	4822 117 11927	75Ω 1% 0.1W
3676	4822 117 10353	150Ω 1% 0.1W
3677	4822 117 11927	75Ω 1% 0.1W
3678	4822 051 20101	100Ω 5% 0.1W
3679	4822 051 20101	100Ω 5% 0.1W
3680	4822 051 20101	100Ω 5% 0.1W
3681	4822 051 20101	100Ω 5% 0.1W
3682	4822 051 20101	100Ω 5% 0.1W
3683	4822 051 20101	100Ω 5% 0.1W
3684	4822 051 20101	100Ω 5% 0.1W
3685	4822 051 20101	100Ω 5% 0.1W
3687	4822 051 20472	4k7 5% 0.1W

3688	4822 051 20101	100Ω 5% 0.1W
3689	4822 051 20101	100Ω 5% 0.1W
3690	4822 051 10102	1k 2% 0.25W
3691	4822 051 10102	1k 2% 0.25W
3692	4822 051 10102	1k 2% 0.25W
3693	4822 051 10102	1k 2% 0.25W
3694	4822 051 10102	1k 2% 0.25W
3695	4822 117 10833	10k 1% 0.1W
3696	4822 117 10833	10k 1% 0.1W
3697	4822 051 10102	1k 2% 0.25W
3698	4822 051 10102	1k 2% 0.25W
3699	4822 051 10102	1k 2% 0.25W
3700	4822 051 10102	1k 2% 0.25W
3701	4822 051 20471	470Ω 5% 0.1W
3702	4822 051 10102	1k 2% 0.25W
3703	4822 117 11507	6k8 1% 0.1W
3704	4822 117 11507	6k8 1% 0.1W
3705	4822 117 11507	6k8 1% 0.1W
3706	4822 117 11507	6k8 1% 0.1W
3707	4822 117 11507	6k8 1% 0.1W
3720	4822 117 11148	56k 1% 0.1W
3721	4822 117 10353	150Ω 1% 0.1W
3722	4822 117 11148	56k 1% 0.1W
3723	4822 117 11148	56k 1% 0.1W
3724	4822 051 20229	22Ω 5% 0.1W
3725	4822 051 20229	22Ω 5% 0.1W
3726	4822 051 20229	22Ω 5% 0.1W
3727	4822 051 20229	22Ω 5% 0.1W
3728	4822 051 20229	22Ω 5% 0.1W
3729	4822 051 20229	22Ω 5% 0.1W
3730	4822 051 20229	22Ω 5% 0.1W
3731	4822 051 20229	22Ω 5% 0.1W
3732	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3733	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3734	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3735	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3736	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3737	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3738	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3739	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3740	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3741	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3742	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3743	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3744	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3745	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3746	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3747	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3748	4822 117 10837	100k 1% 0.1W
3749	4822 117 10837	100k 1% 0.1W
3750	4822 117 10837	100k 1% 0.1W
3751	4822 117 10837	100k 1% 0.1W
3752	4822 117 10837	100k 1% 0.1W
3753	4822 117 10837	100k 1% 0.1W
3754	4822 117 10837	100k 1% 0.1W
3755	4822 117 10837	100k 1% 0.1W
3756	4822 117 10837	100k 1% 0.1W
3757	4822 117 10837	100k 1% 0.1W
3758	4822 117 10837	100k 1% 0.1W
3759	4822 117 10837	100k 1% 0.1W
3760	4822 117 10837	100k 1% 0.1W
3761	4822 117 10837	100k 1% 0.1W
3762	4822 117 11504	270Ω 1% 0.1W
3763	4822 051 20101	100Ω 5% 0.1W
3764	4822 117 10833	10k 1% 0.1W
3765	4822 117 10833	10k 1% 0.1W
3768	4822 117 10834	47k 1% 0.1W
3769	4822 117 10834	47k 1% 0.1W
3770	4822 117 10834	47k 1% 0.1W
3771	4822 117 10834	47k 1% 0.1W
3772	4822 117 10834	47k 1% 0.1W
3773	4822 117 10833	10k 1% 0.1W
3774	4822 117 10834	47k 1% 0.1W
3800	4822 051 20472	4k7 5% 0.1W
3801	4822 051 20472	4k7 5% 0.1W
3802▲	4822 117 11152	4Ω7 5%
3803▲	4822 117 11152	4Ω7 5%
3804	4822 117 10834	47k 1% 0.1W
3805	4822 117 10833	10k 1% 0.1W
3999	4822 117 12842	

5400	4822 157 70601	100µH (920927085A)

6302	4822 130 83757	BAS216
6400	4822 130 10845	GP1F32T
6401	4822 130 11047	BZX284-C9V1
6403	4822 130 83757	BAS216
6404	4822 130 11383	BZX284-C5V1

7006	4822 130 60511	BC847B
7007	4822 130 60511	BC847B
7008	4822 130 60511	BC847B
7009	4822 130 60373	BC856B
7010	4822 130 60511	BC847B
7011	4822 130 60511	BC847B
7012	4822 130 60373	BC856B
7013	4822 130 60511	BC847B
7014	4822 130 60511	BC847B
7300	4822 130 60373	BC856B
7301	4822 130 60511	BC847B
7304	9322 134 86668	LF80C
7310	4822 130 60511	BC847B
7329	4822 130 60511	BC847B
7330	4822 130 60511	BC847B
7331	4822 130 40959	BC547B
7332	4822 130 60373	BC856B
7333	4822 130 41246	BC327-25
7334	4822 130 60511	BC847B
7335	4822 130 60511	BC847B
7400	9322 134 92676	L78L33
7401	4822 209 17423	UAD1328T
7402	4822 130 42804	BC817-25
7403	4822 209 32071	MC33079D
7404	4822 130 42615	BC817-40
7405	4822 130 42615	BC817-40
7406	4822 130 42615	BC817-40
7407	4822 130 42615	BC817-40
7900	5322 209 11296	74HC4053N
7901	5322 209 11296	74HC4053N
7902	5322 209 11296	74HC4053N
7903	5322 209 11296	74HC4053N
7904	5322 209 11296	74HC4053N
7905	5322 209 11296	74HC4053N
7917	4822 209 17512	TEA6420D
7918	4822 130 60511	BC847B
7919	4822 130 60511	BC847B
7920	4822 130 60511	BC847B
7921	4822 130 60511	BC847B
7922	4822 130 60511	BC847B
7923	4822 130 60511	BC847B
7924	4822 130 60511	BC847B
7925	4822 130 60511	BC847B
7926	4822 130 60511	BC847B
7927	4822 130 60511	BC847B
7928	4822 130 60511	BC847B
7929	4822 130 60511	BC847B
7930	4822 130 60511	BC847B
7931	4822 130 60511	BC847B
7933	4822 130 60511	BC847B
7934	4822 130 60511	BC847B
7935	4822 130 60511	BC847B
7936	4822 130 60373	BC856B
7937	4822 130 60373	BC856B
7938	4822 130 60373	BC856B
7939	4822 130 60373	BC856B
7941	4822 130 60373	BC856B
7942	4822 130 60373	BC856B
7943	4822 130 60511	BC847B
7944	4822 130 60511	BC847B
7945	4822 130 60373	BC856B
7946	4822 130 60373	BC856B
7947	4822 130 60511	BC847B
7949	4822 130 60511	BC847B

13. Spare parts list DVD 751 /001

Various

Various

0381	2422 076 00304	CABLE CINCH/CINCH 1M5 YE/RD/WH
0382	4822 321 61847	SCART
0384	3139 228 82060	IRT ASSY RC283201/01 PACKED
0385▲	4822 321 10249	SBC1201 MAINS CABLE
0387	3139 246 10280	IFU DVD751/00X
0454	3104 126 20540	PE-SHEET 720X550 POLYETHYLEEN

Accessories

Various

0200	3139 247 50810	CAB FRONT DVD751/00X PNT PRT
0201	4822 459 10887	
0202	3139 240 00030	DVD LOGO DVD711
0203	3139 244 00160	LIGHT CONDUCTOR DVD950
0204	3139 247 50910	WINDOW DVD751/00X PNT PRT
0205	3139 247 50850	BTN STANDBY DVD751/ 00X PNT PRT
0208	3139 247 50670	VOL KNOB DVD931 PNT PRT
0219	3139 247 50940	DOOR DVD751/00X PNT PRT
0220	3139 241 20110	DOOR SPRING
0232	3139 247 50340	COVER TOP
0240	3139 247 50880	BTN CONTROL DVD751/ 00X PNT PRT
0242	3139 247 50950	RING DVD751/00X PNT PRT
0244	3139 247 50750	FOOT ASSY DVD711
0245	3139 247 50750	FOOT ASSY DVD711
1014	3139 110 34220	FFC FOIL 22P/105/22P BD B
1018	3139 110 34230	FFC FOIL 16P/105/16P BD B

Headphone PCB

Various

1003	4822 267 31453	

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2200	4822 122 33926	12pF 50V
2201	4822 126 14585	100nF 10% 50V
2202	4822 126 14585	100nF 10% 50V
2203	4822 126 14585	100nF 10% 50V
2204	5322 122 31647	1nF 10% 63V
2205	4822 122 33926	12pF 50V
2206	4822 126 14585	100nF 10% 50V
2207	5322 122 31647	1nF 10% 63V
2208	4822 124 40207	100µF 20% 25V
2209	4822 124 40207	100µF 20% 25V
2210	5322 122 31647	1nF 10% 63V

3201	4822 101 21199	10kX2 20% 0.025W
3206	4822 051 20101	100Ω 5% 0.1W
3207	4822 051 20229	22Ω 5% 0.1W
3209	4822 051 20101	100Ω 5% 0.1W
3210	4822 051 20229	22Ω 5% 0.1W
3211	4822 051 20472	4k7 5% 0.1W
3212	4822 117 11507	6k8 1% 0.1W
3214	4822 051 20472	4k7 5% 0.1W
3215	4822 117 11507	6k8 1% 0.1W

7802	4822 209 62059	TCA0372DP1

Front PCB

Various

0002	3139 244 00440	FTD HOLDER DVD711
1100	4822 276 13775	SWITCH
1101	4822 276 13775	SWITCH
1102	4822 276 13775	SWITCH
1106	4822 276 13775	SWITCH
1107	4822 276 13775	SWITCH
1108	4822 276 13775	SWITCH
1109	4822 276 13775	SWITCH
1110	2422 540 98423	RES CER 8MHz CSTS*MHz 03
1111	4822 276 13775	SWITCH
1112	8239 210 52390	BEEPER PKM13EPY-4002
1113	2722 171 07172	VFD 14-MT-27GNK 135*29 (FTB0)B

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2100	4822 122 33575	220pF 5% 63V CASE
2101	4822 122 33575	220pF 5% 63V CASE
2102	5322 122 32531	100pF 5% 50V
2103	5322 122 32531	100pF 5% 50V
2105	4822 126 12105	50V 33nF PM5
2106	4822 124 40248	10µF 20% 63V
2107	4822 126 12105	50V 33nF PM5
2108	4822 126 12105	50V 33nF PM5
2109	4822 126 12105	50V 33nF PM5
2110	4822 126 12105	50V 33nF PM5
2111	4822 126 12105	50V 33nF PM5
2114	5322 122 32658	22pF 5% 50V
2115	5322 122 32658	22pF 5% 50V
2116	4822 126 12105	50V 33nF PM5
2117	4822 124 40248	10µF 20% 63V
2122	4822 126 12105	50V 33nF PM5
2123	4822 124 11947	10µF 20% 16V
2124	3198 028 42290	EL 5MM 35V 22µF PM20 COL A
2125	5322 122 32658	22pF 5% 50V
2126	4822 124 40248	10µF 20% 63V
2128	5322 122 31647	1nF 10% 63V
2129	3198 028 42290	EL 5MM 35V 22µF PM20 COL A
2130	3198 028 42290	EL 5MM 35V 22µF PM20 COL A
2201	4822 126 12105	50V 33nF PM5
2211	5322 122 32531	100pF 5% 50V

3100	4822 051 20223	22k 5% 0.1W
3101	4822 051 20273	27k 5% 0.1W
3102	4822 117 10834	47k 1% 0.1W
3103	4822 117 11149	82k 1% 0.1W
3104	4822 117 10837	100k 1% 0.1W
3105	4822 051 20008	0Ω jumper . (0805)
3106	4822 117 11503	220Ω 1% 0.1W
3107	4822 051 20008	0Ω jumper . (0805)
3108	4822 117 11149	82k 1% 0.1W
3109	4822 051 20472	4k7 5% 0.1W
3110	4822 051 20472	4k7 5% 0.1W
3111	4822 051 20472	4k7 5% 0.1W
3112	4822 051 20472	4k7 5% 0.1W
3113	4822 051 20472	4k7 5% 0.1W
3114	4822 051 20109	10Ω 5% 0.1W
3115	4822 051 20472	4k7 5% 0.1W
3116	4822 117 11149	82k 1% 0.1W
3117	4822 117 11152	4Ω7 5%
3118	4822 117 10833	10k 1% 0.1W
3119	4822 117 10833	10k 1% 0.1W
3120	4822 051 20471	470Ω 5% 0.1W
3121	4822 051 20472	4k7 5% 0.1W
3122	4822 051 20109	10Ω 5% 0.1W
3123	4822 117 10833	10k 1% 0.1W
3125	4822 051 20109	10Ω 5% 0.1W
3130	4822 051 20109	10Ω 5% 0.1W
3131	4822 117 11152	4Ω7 5%
3132	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3133	4822 051 20109	10Ω 5% 0.1W
3134	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3135	4822 117 11503	220Ω 1% 0.1W
3136	4822 051 10102	1k 2% 0.25W
3137	4822 117 10833	10k 1% 0.1W
3138	4822 051 20471	470Ω 5% 0.1W
3139	4822 051 20472	4k7 5% 0.1W
3140	4822 117 10833	10k 1% 0.1W
3142	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3143	4822 117 10833	10k 1% 0.1W
3144	4822 117 10837	100k 1% 0.1W
3145	4822 117 10833	10k 1% 0.1W
3150	4822 051 20472	4k7 5% 0.1W
3151	4822 051 20101	100Ω 5% 0.1W

6100	4822 130 83757	BAS216
6101	4822 130 11666	BZX284-C8V2
6102	4822 130 10794	BZX284-C10
6104	4822 130 83757	BAS216
6105	4822 130 83757	BAS216
6200	4822 130 82978	LTL-16KPE-P

7100	4822 130 60511	BC847B
7101	4822 130 60511	BC847B
7102	4822 130 60511	BC847B
7103	4822 130 60511	BC847B
7104	3104 123 94530	IC ROM SLAVE DVD950
7105	4822 130 40855	BC337
7106	4822 130 40854	BC327
7107	4822 130 60511	BC847B
7108	4822 130 60511	BC847B
7109	4822 130 60373	BC856B
7110	4822 212 30842	TSOP1736SB1
7112	4822 209 31257	MC79L24ACP

Loader

Various

0001	9305 023 61001	VAL3000

PSU 20PS223

Various

0025	4822 492 63524	FIX. TRANSISTOR
0101▲	4822 265 31015	
0120	4822 265 11253	FUSE HOLDER 2P
1120▲	4822 253 30383	19181 (2,5A)

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2120▲	4822 121 10512	275V 220nF 20%
2121	8211 248 53120	C CHM YK 68M 400VM RUBYCOnF
2122	4822 121 70141	33nF 5% 400V
2127	4822 122 50116	470pF 10% 1KV
2130▲	4822 126 14572	100pF 10% 250V
2131▲	4822 126 14133	1nF 20% 250V
2133	4822 124 40248	10µF 20% 63V
2134	2020 012 93111	EL YK 35V S 47µF PM20 A
2141	4822 124 22652	2.2µF 20% 50V
2143	4822 126 14585	100nF 10% 50V
2145	5322 126 10223	4.7nF 10% 63V
2146	4822 126 14585	100nF 10% 50V
2150	4822 126 14585	100nF 10% 50V
2156	5322 122 31863	63V 330pF PM5
2157	5322 122 32268	470pF 10% 50V
2202	4822 126 13838	100nF 50V 20%
2210	2020 012 93728	EL YK 10V S 2200µF PM20 B
2230	4822 124 22779	1000µF 10V
2232	4822 124 81021	100µF 20% 16V
2233	4822 124 81021	100µF 20% 16V
2234	4822 126 12105	50V 33nF PM5
2238	4822 124 81021	100µF 20% 16V
2239	4822 124 81021	100µF 20% 16V
2240	4822 124 81147	470µF 20% YK 25V
2250	4822 124 41545	220µF 20% 16V

2260	4822 124 81151	22µF 50V

3105	4822 053 21684	680k 5% 0.5W
3111	4822 116 52186	22Ω 5% 0.5W
3120▲	4822 116 21217	1M A/423V 800V
3121	4822 117 12181	470Ω 20% 0.5W
3123	4822 116 83882	39k 5% 0.5W
3125	4822 117 10833	10k 1% 0.1W
3126	4822 050 24708	4Ω7 1% 0.6W
3127	4822 116 80176	1Ω 5% 0.5W
3128	4822 116 80176	1Ω 5% 0.5W
3129	4822 116 83882	39k 5% 0.5W
3134	4822 116 83882	39k 5% 0.5W
3135	4822 053 11159	15Ω 5% 2W
3139	4822 051 20479	47Ω 5% 0.1W
3140	4822 116 52191	33Ω 5% 0.5W
3141	4822 117 10833	10k 1% 0.1W
3143	4822 117 10834	47k 1% 0.1W
3145	4822 116 83933	15k 1% 0.1W
3146	4822 117 11148	56k 1% 0.1W
3150	4822 117 11139	1k5 1% 0.1W
3153	4822 116 83933	15k 1% 0.1W
3154	4822 051 10102	1k 2% 0.25W
3155	4822 116 52219	330Ω 5% 0.5W
3156	4822 051 20339	33Ω 5% 0.1W
3201	4822 116 52176	10Ω 5% 0.5W
3202	4822 117 11141	1k8 1% 0.1W
3204	4822 117 11504	270Ω 1% 0.1W
3205	4822 117 11145	4k7 1% 0.1W
3206	4822 051 20008	0Ω jumper . (0805)
3207	4822 051 10102	1k 2% 0.25W
3233	4822 050 11002	1k 1% 0.4W
3234	4822 051 10102	1k 2% 0.25W
3235	4822 116 83933	15k 1% 0.1W
3236	4822 051 20472	4k7 5% 0.1W
3237	4822 117 11145	4k7 1% 0.1W
3260	4822 051 20102	1k 5% 0.1W
3262	4822 116 83872	220Ω 5% 0.5W
4xxx	4822 051 10008	0Ω 5% 0.25W (1206)
4xxx	4822 051 20008	0Ω 5% 0.25W (0805)

5120▲	4822 157 11846	
5125	4822 157 11411	100mH z
5131▲	4822 146 10402	TRAFO CT395FANF/PVF
5210	4822 157 11722	6.8µH 20% 7.7X9.5
5223	4822 157 50963	2.2µH
5231	4822 157 11722	6.8µH 20% 7.7X9.5
5240	4822 157 51195	1 µH 20% 4X9.8MM AXIAL
5260	4822 157 11517	10µH 5% 2.3X3.4

6110	5322 130 34574	1N4004G
6111	5322 130 34574	1N4004G
6120	4822 130 83707	SINB80
6122	4822 130 34281	BZX79-B15
6123	4822 130 34281	BZX79-B15
6132	4822 130 42488	BYD33D
6133	4822 130 83649	1SS355
6140	4822 130 30621	1N4148
6141	4822 130 11152	UDZ18B
6150	4822 130 11148	UDZ4.7B
6210	4822 130 11584	BYW98-200-C1
6230	4822 130 11584	BYW98-200-C1
6241	4822 130 11584	BYW98-200-C1
6250	4822 130 42606	BYD33J
6261	4822 130 42606	BYD33J

7125	4822 130 11417	STP3NB60FP
7131▲	4822 130 91451	CQY80NG
7141	4822 130 44568	BC557B
7145	9322 145 88682	UC3842A
7150	4822 130 40959	BC547B
7201	4822 209 81397	TL431CLPST
7233	5322 209 86445	LM7805CT
7235	4822 130 42705	BC847
7236	4822 130 11578	STP16NE06
7237	4822 209 81397	TL431CLPST

AV PCB

Various

1300	4822 265 11154	52030-2210 (22P)
1301	4822 265 11103	52030-1610 (16P)
1303	4822 267 10994	4P, MDIN
1304	2422 033 00334	CON BM EURO H 42P F BK GRND-L
1402	4822 265 11566	3P YKC21-3930
1405	4822 267 31729	

2308	4822 122 33575	220pF 5% 63V CASE
2314	4822 124 41584	100µF 20% 10V
2337	4822 122 33575	220pF 5% 63V CASE
2351	4822 126 14585	100nF 10% 50V
2352	4822 126 14585	100nF 10% 50V
2353	4822 124 40769	4.7µF 20% 100V
2354	4822 126 14076	220nF 25V. P8020
2355	4822 124 40769	4.7µF 20% 100V
2357	4822 124 40769	4.7µF 20% 100V
2358	4822 122 33575	220pF 5% 63V CASE
2359	4822 124 40769	4.7µF 20% 100V
2360	4822 126 13692	47pF 1% 63V
2361	4822 126 13692	47pF 1% 63V
2362	4822 126 14585	100nF 10% 50V
2363	4822 126 14585	100nF 10% 50V
2364	4822 124 41584	100µF 20% 10V
2365	5322 122 32654	22nF 10% 63V
2366	4822 122 33575	220pF 5% 63V CASE
2367	4822 126 14585	100nF 10% 50V
2368	4822 122 33575	220pF 5% 63V CASE
2369	4822 122 33575	220pF 5% 63V CASE
2370	4822 124 40248	10µF 20% 63V
2371	4822 122 33575	220pF 5% 63V CASE
2372	4822 124 40769	4.7µF 20% 100V
2373	4822 124 40769	4.7µF 20% 100V
2374	4822 126 14076	220nF 25V. P8020
2375	4822 122 33575	220pF 5% 63V CASE
2376	4822 124 40248	10µF 20% 63V
2377	4822 122 33575	220pF 5% 63V CASE
2378	4822 124 40769	4.7µF 20% 100V
2379	4822 126 14585	100nF 10% 50V
2380	4822 126 14585	100nF 10% 50V
2381	4822 126 14585	100nF 10% 50V
2382	4822 124 40769	4.7µF 20% 100V
2383	4822 124 40769	4.7µF 20% 100V
2384	4822 126 14583	470nF 10% 16V XTR
2385	4822 124 40769	4.7µF 20% 100V
2386	4822 126 14583	470nF 10% 16V XTR
2387	4822 126 14583	470nF 10% 16V XTR
2388	4822 126 14076	220nF 25V. P8020
2389	4822 126 14583	470nF 10% 16V XTR
2390	4822 122 33177	10nF 20% 50V
2391	4822 122 33177	10nF 20% 50V
2392	4822 126 14583	470nF 10% 16V XTR
2393	4822 122 33177	10nF 20% 50V
2394	4822 126 14076	220nF 25V. P8020
2395	4822 122 33575	220pF 5% 63V CASE
2396	4822 124 40248	10µF 20% 63V
2397	4822 122 33177	10nF 20% 50V
2398	4822 122 33177	10nF 20% 50V
2399	4822 124 40248	10µF 20% 63V
2400	4822 122 33177	10nF 20% 50V
2401	4822 126 14583	470nF 10% 16V XTR
2402	4822 122 33575	220pF 5% 63V CASE
2403	4822 126 14076	220nF 25V. P8020
2404	4822 122 33575	220pF 5% 63V CASE
2405	4822 126 13692	47pF 1% 63V
2406	4822 126 13692	47pF 1% 63V
2407	2222 780 15656	16V 330nF PM10 R
2408	4822 122 33575	220pF 5% 63V CASE
2409	4822 122 33575	220pF 5% 63V CASE
2410	4822 122 33575	220pF 5% 63V CASE
2411	4822 124 40248	10µF 20% 63V
2412	4822 124 40433	47µF 20% 25V
2413	5322 122 32531	100pF 5% 50V
2414	5322 122 32531	100pF 5% 50V
2415	4822 124 40248	10µF 20% 63V
2416	4822 126 14585	100nF 10% 50V
2417	4822 126 14585	100nF 10% 50V
2418	2222 780 15656	16V 330nF PM10 R
2419	4822 124 40433	47µF 20% 25V
2450	5322 122 32654	22nF 10% 63V
2452	4822 126 14076	220nF 25V. P8020
2453	4822 124 40433	47µF 20% 25V
2455	5322 122 32531	100pF 5% 50V
2456	4822 124 22339	100UE 16V
2457	5322 126 10511	1nF 5% 50V
2458	5322 122 32654	22nF 10% 63V
2459	5322 122 32531	100pF 5% 50V
2460	5322 122 32654	22nF 10% 63V
2461	5322 122 32531	100pF 5% 50V
2462	4822 124 22339	100UE 16V
2463	5322 126 10511	1nF 5% 50V
2464	5322 122 32531	100pF 5% 50V
2469	5322 122 32654	22nF 10% 63V
2470	5322 122 32654	22nF 10% 63V
2471	4822 126 14585	100nF 10% 50V
2472	4822 124 40433	47µF 20% 25V
2476	4822 124 22339	100UE 16V
2479	5322 122 32654	22nF 10% 63V
2483	4822 124 22339	100UE 16V
2488	4822 126 14585	100nF 10% 50V
2489	4822 126 14585	100nF 10% 50V
2491	4822 124 41584	100µF 20% 10V
2493	4822 126 13692	47pF 1% 63V
2495	4822 124 40248	10µF 20% 63V

3300	4822 117 10353	150Ω 1% 0.1W
3301	4822 051 20101	100Ω 5% 0.1W
3302	4822 051 20101	100Ω 5% 0.1W
3303	4822 117 11927	75Ω 1% 0.1W
3304	4822 117 11507	6k8 1% 0.1W
3305	4822 117 11454	820Ω 1% 0.1W
3306	4822 051 20471	470Ω 5% 0.1W
3307	4822 051 20472	4k7 5% 0.1W
3308	4822 117 10361	680Ω 1% 0.1W
3309	4822 117 10353	150Ω 1% 0.1W
3310	4822 117 11927	75Ω 1% 0.1W
3312	4822 117 11503	220Ω 1% 0.1W
3313	4822 051 20391	390Ω 5% 0.1W
3314	4822 051 10102	1k 2% 0.25W
3315	4822 051 20471	470Ω 5% 0.1W
3316	4822 117 10834	47k 1% 0.1W
3318	4822 117 10834	47k 1% 0.1W
3319	4822 051 10102	1k 2% 0.25W
3320	4822 117 10834	47k 1% 0.1W
3321	4822 051 20101	100Ω 5% 0.1W
3322	4822 051 20101	100Ω 5% 0.1W
3323	4822 051 20471	470Ω 5% 0.1W
3325	4822 117 10834	47k 1% 0.1W
3327	4822 117 11927	75Ω 1% 0.1W
3329	4822 051 20471	470Ω 5% 0.1W
3330	4822 117 11927	75Ω 1% 0.1W
3331	4822 117 11145	4k7 1% 0.1W
3332	4822 051 20471	470Ω 5% 0.1W
3333	4822 117 10353	150Ω 1% 0.1W
3334	4822 117 10357	4k3 1% 0.2W
3335	4822 051 20471	470Ω 5% 0.1W
3336	4822 117 11927	75Ω 1% 0.1W
3338	4822 117 10833	10k 1% 0.1W
3339	4822 051 20101	100Ω 5% 0.1W
3340	4822 051 20101	100Ω 5% 0.1W
3341	4822 117 10833	10k 1% 0.1W
3342	4822 051 20471	470Ω 5% 0.1W
3343	4822 117 11927	75Ω 1% 0.1W
3345	4822 117 11927	75Ω 1% 0.1W
3347	4822 051 20471	470Ω 5% 0.1W
3348	4822 051 10102	1k 2% 0.25W
3349	4822 117 10834	47k 1% 0.1W
3350	4822 117 10833	10k 1% 0.1W
3351	4822 051 20471	470Ω 5% 0.1W
3352	4822 051 20562	5k6 5% 0.1W 0805
3353	4822 051 10102	1k 2% 0.25W
3354	4822 117 11927	75Ω 1% 0.1W
3355	4822 051 20339	33Ω 5% 0.1W
3356	4822 051 20472	4k7 5% 0.1W
3357	4822 051 20472	4k7 5% 0.1W
3359	4822 117 10834	47k 1% 0.1W
3360	4822 051 20471	470Ω 5% 0.1W
3362	4822 051 20471	470Ω 5% 0.1W
3363	4822 051 10102	1k 2% 0.25W
3364	2322 734 65609	RST SM 0805 RC12H 56Ω PM1 R
3365	4822 051 20561	560Ω 5% 0.1W
3366	4822 117 10834	47k 1% 0.1W
3367	4822 117 12955	2k7 1% 0.1W 0805
3368	4822 117 12955	2k7 1% 0.1W 0805
3378	4822 051 10102	1k 2% 0.25W
3394	4822 051 20471	470Ω 5% 0.1W
3395	4822 051 20472	4k7 5% 0.1W
3397	4822 117 10834	47k 1% 0.1W
3398	4822 051 20472	4k7 5% 0.1W

3399	4822 051 20562	5k6 5% 0.1W 0805
3400	4822 117 11927	75Ω 1% 0.1W
3401	4822 117 11927	75Ω 1% 0.1W
3402	4822 051 20472	4k7 5% 0.1W
3403	4822 117 11927	75Ω 1% 0.1W
3404	4822 117 11927	75Ω 1% 0.1W
3405	4822 117 11927	75Ω 1% 0.1W
3406	4822 117 11927	75Ω 1% 0.1W
3407	4822 117 11927	75Ω 1% 0.1W
3408	4822 117 11927	75Ω 1% 0.1W
3409	4822 051 20471	470Ω 5% 0.1W
3410	4822 051 20471	470Ω 5% 0.1W
3411	4822 117 11927	75Ω 1% 0.1W
3413	4822 117 10834	47k 1% 0.1W
3414	4822 051 20472	4k7 5% 0.1W
3415	4822 051 20223	22k 5% 0.1W
3416	4822 051 20339	33Ω 5% 0.1W
3417	4822 051 20471	470Ω 5% 0.1W
3418	4822 051 20101	100Ω 5% 0.1W
3419	4822 051 20101	100Ω 5% 0.1W
3420	4822 117 11149	82k 1% 0.1W
3421	4822 117 11504	270Ω 1% 0.1W
3422	4822 051 20472	4k7 5% 0.1W
3423	2322 734 65609	RST SM 0805 RC12H 56Ω PM1 R
3424	4822 051 20223	22k 5% 0.1W
3425	4822 117 11927	75Ω 1% 0.1W
3427	4822 051 20472	4k7 5% 0.1W
3429	4822 117 11927	75Ω 1% 0.1W
3431	4822 051 20471	470Ω 5% 0.1W
3432	4822 117 11927	75Ω 1% 0.1W
3433	4822 051 20008	0Ω jumper . (0805)
3434	4822 051 20101	100Ω 5% 0.1W
3435	4822 051 20101	100Ω 5% 0.1W
3436	4822 117 10353	150Ω 1% 0.1W
3437	4822 051 20101	100Ω 5% 0.1W
3438	4822 051 20101	100Ω 5% 0.1W
3439	4822 051 20101	100Ω 5% 0.1W
3440	4822 051 20101	100Ω 5% 0.1W
3441	4822 051 20101	100Ω 5% 0.1W
3442	4822 051 20101	100Ω 5% 0.1W
3444	4822 117 10833	10k 1% 0.1W
3445	4822 117 10833	10k 1% 0.1W
3446	4822 117 12955	2k7 1% 0.1W 0805
3447	4822 117 12955	2k7 1% 0.1W 0805
3448	4822 117 10833	10k 1% 0.1W
3451	4822 117 10833	10k 1% 0.1W
3452	4822 051 20008	0Ω jumper . (0805)
3453	4822 117 10833	10k 1% 0.1W
3454	4822 117 10833	10k 1% 0.1W
3455	4822 117 10833	10k 1% 0.1W
3456	4822 051 20101	100Ω 5% 0.1W
3457	4822 051 20101	100Ω 5% 0.1W
3458	4822 051 20008	0Ω jumper . (0805)
3459	4822 117 10833	10k 1% 0.1W
3460	4822 051 20008	0Ω jumper . (0805)
3461	4822 117 10833	10k 1% 0.1W
3462	4822 117 12955	2k7 1% 0.1W 0805
3463	4822 117 12955	2k7 1% 0.1W 0805
3464	4822 117 10833	10k 1% 0.1W
3472	4822 117 11152	4Ω7 5%
3473	4822 051 20008	0Ω jumper . (0805)
3476	4822 051 20101	100Ω 5% 0.1W
3477	4822 051 20101	100Ω 5% 0.1W
3481	4822 117 12955	2k7 1% 0.1W 0805
3491	4822 051 20101	100Ω 5% 0.1W
3492	4822 051 20101	100Ω 5% 0.1W
3494	4822 117 12955	2k7 1% 0.1W 0805
3505	4822 051 20101	100Ω 5% 0.1W
3507	4822 051 20101	100Ω 5% 0.1W
3508	4822 117 12521	68Ω 1% 0.1W
3513	4822 117 12955	2k7 1% 0.1W 0805
3514	4822 117 12955	2k7 1% 0.1W 0805
3515	4822 117 10837	100k 1% 0.1W
3516	4822 117 11152	4Ω7 5%
3517	4822 051 20101	100Ω 5% 0.1W
3518	4822 117 12955	2k7 1% 0.1W 0805
3519	4822 051 20562	5k6 5% 0.1W 0805
3520	4822 051 20472	4k7 5% 0.1W
3521	4822 051 10102	1k 2% 0.25W
3522	4822 051 10102	1k 2% 0.25W
3524	4822 051 20008	0Ω jumper . (0805)
3600	4822 051 20472	4k7 5% 0.1W
3601	4822 051 20472	4k7 5% 0.1W
3602	4822 051 20472	4k7 5% 0.1W
3603	4822 117 10837	100k 1% 0.1W
3604	4822 117 11449	2k2 5% 0.1W 0805
3605	4822 051 20472	4k7 5% 0.1W
3606	4822 051 20561	560Ω 5% 0.1W
3607	4822 051 20562	5k6 5% 0.1W 0805
3608	4822 117 10837	100k 1% 0.1W
3609	4822 051 20822	8k2 5% 0.1W
3610	4822 051 20472	4k7 5% 0.1W
3611	4822 051 20472	4k7 5% 0.1W
3612	4822 117 10833	10k 1% 0.1W
3613	4822 117 12955	2k7 1% 0.1W 0805
3614	4822 117 10833	10k 1% 0.1W
3615	4822 117 11152	4Ω7 5%
3616	4822 051 20472	4k7 5% 0.1W
3617	4822 117 10833	10k 1% 0.1W
3618	4822 117 10361	680Ω 1% 0.1W
3619	4822 117 10833	10k 1% 0.1W
3620	4822 051 10008	0Ω 5% 0.25W
3621	4822 051 20472	4k7 5% 0.1W
3622	4822 117 10833	10k 1% 0.1W
3623	4822 117 11139	1k5 1% 0.1W
3624	4822 117 10833	10k 1% 0.1W
3625	4822 051 10102	1k 2% 0.25W
3628	4822 117 11139	1k5 1% 0.1W
3999	4822 117 12842	
4xxx	4822 051 10008	0Ω 5% 0.25W (1206)
4xxx	4822 051 20008	0Ω 5% 0.25W (0805)

5400	4822 157 70601	100µH (920927085A)

6300	4822 130 10648	BZX284-C5V6
6301	4822 130 83757	BAS216
6302	4822 130 83757	BAS216
6303	4822 130 83757	BAS216
6306	4822 130 11528	1PS76SB10
6307	4822 130 11528	1PS76SB10
6308	4822 130 11528	1PS76SB10
6309	4822 130 11383	BZX284-C5V1
6400	4822 130 10845	GP1F32T

7300	4822 130 60373	BC856B
7301	4822 130 60511	BC847B
7302	4822 130 60511	BC847B
7303	4822 130 60511	BC847B
7304	9322 134 86668	LF80C
7305	9322 135 58671	IC SM STV6410AD (ST00) Y
7306	4822 130 60511	BC847B
7307	4822 130 60511	BC847B
7308	4822 130 60511	BC847B
7309	4822 130 60511	BC847B
7310	4822 130 60511	BC847B
7311	4822 130 60511	BC847B
7312	4822 130 60373	BC856B
7313	4822 130 60511	BC847B
7314	4822 130 42804	BC817-25
7315	4822 130 42804	BC817-25
7316	4822 209 16256	TDA4780/V4
7320	4822 130 60511	BC847B
7321	4822 130 42804	BC817-25
7322	4822 130 60511	BC847B
7324	4822 130 42804	BC817-25
7325	4822 130 60511	BC847B
7326	4822 130 60373	BC856B
7327	4822 130 60511	BC847B
7328	4822 130 60511	BC847B
7329	4822 130 60511	BC847B
7330	4822 130 60511	BC847B
7331	4822 130 40981	BC337-25
7332	4822 130 60373	BC856B
7333	4822 130 41246	BC327-25
7334	4822 130 60511	BC847B
7335	4822 130 60511	BC847B
7336	4822 130 42804	BC817-25
7337	4822 130 42804	BC817-25
7400	4822 209 17398	LD1117DT33
7401	4822 209 17423	UAD1328T
7402	4822 130 42804	BC817-25
7403	4822 209 32071	MC33079D
7404	4822 130 42804	BC817-25
7405	4822 130 42804	BC817-25
7406	4822 130 42804	BC817-25
7407	4822 130 42804	BC817-25
7414	4822 209 30095	LM833D
7415	4822 130 42804	BC817-25
7416	4822 130 42804	BC817-25
7417	4822 130 60373	BC856B
7419	4822 130 42804	BC817-25
7420	4822 130 42804	BC817-25
7422	4822 130 44568	BC557B
7423	4822 130 60511	BC847B